STUDIES IN PEDAGOGY

Thomas J. Morgan

Southern Branch
of the
University of California
Los Angeles

Form L 1

OCT 23

NOV 29

APR 22

OCT 31

JUN 29

FEB 15 NOV 15

MAR 10

APR 14

VALUABLE NEW BOOKS

FROM THE CATALOGUE OF

SILVER, BURDETT & CO.

Elements of Psychology. A Text-book for Schools and Colleges. By NOAH K. DAVIS, M.A., Ph.D., LL.D., Professor of Moral Philosophy in the University of Virginia. Introductory price, $1.80. Mailing price, $2.00.

The Laws of Thought, or Formal Logic. A brief work for High Schools, Academies, and Colleges. By WILLIAM POLAND, Professor of Rational Philosophy in St. Louis University. Introductory price, 72 cents. Mailing price, 80 cents.

Introduction to the Books of the Old Testament, with analyses and numerous references to illustrative literature. By O. S. STEARNS, D.D., Professor of Biblical Interpretation in Newton Theological Institution. 12mo, cloth, $1.00. A book for every reader and student of the Bible.

Through Death to Life. Ten sermons on the Great Resurrection Chapter of St. Paul. By REUEN THOMAS, D.D., Ph.D., Pastor of Harvard Church, Brookline, Mass. 12mo, cloth, gilt, $1.25.

The Social Influence of Christianity, with special reference to contemporary problems. By DAVID J. HILL, LL.D., President of Rochester University. 238 pp., full cloth, gilt, $1.25.

Principles and Practice of Morality, or, Ethical Principles Discussed and Applied. By EZEKIEL GILMAN ROBINSON, D.D., LL.D., President of Brown University. 12mo, cloth, 264 pp. $1.50.

Robertson's Living Thoughts. A Thesaurus. By KERR BOYCE TUPPER, D.D., Pastor First Baptist Church, Denver, Colorado. With an Introduction by Prof. William C. Richards, Ph.D. 12mo, cloth, 250 pp., $1.00.

Institutes of General History, for the use of general readers and students of history. Confidently believed to be by far the best general history extant. By L. BENJAMIN ANDREWS, D.D., LL.D., President of Brown University. 12mo, cloth, 432 pp., $2.50.

Historical Atlas and General History. By ROBERT H. LABBERTON. 1 vol., royal octavo, 213 pp. of text, 168 Progressive Colored Maps, 30 Genealogical Charts. Cloth, $2.50; library edition, half morocco and gilt, $3.50.

Natural Theology or Rational Theism. By M. VALENTINE, D.D., LL.D., Ex-President of Pennsylvania College and Professor of Theology in Lutheran Theological Seminary, Gettysburg, Pa. 12mo, cloth, 274 pp., $1.25.

Elocution and Oratory.

A Manual of Gesture. — Bacon	$1.25
The Science of Utterance. — Dean	.60
The Orator's Manual. — Raymond	1.25

For sale by all booksellers, or mailed to any address, on receipt of price.

SILVER, BURDETT & CO., Publishers,

6 HANCOCK AVENUE, BOSTON.

THE SOCIAL INFLUENCE OF CHRISTIANITY,

With Special Reference to Contemporary Problems.

By DAVID J. HILL, LL.D., President of Rochester Univ.

THE NEWTON LECTURES FOR 1887.

231 pp. Full cloth. Gilt. Price, $1.25.

THIS volume presents a clear and vigorous discussion of the great social, political, and economic questions of the day in the light of Christianity. Ten years of experience as a teacher of economics and sociology have enabled the author to grasp the issues of his subject in a truly scientific manner, and his extended travel in Europe for the purpose of gathering materials for this work has enriched his knowledge of the contemporary condition of society with the fruits of observation. After a more general treatment, the social relation of Christianity, considered as the influence of Jesus Christ, is elaborated in a brief, clear, and conclusive manner with reference to the contemporary problems of Labor, Wealth, Marriage, Education, Legislation, and the Repression of Crime. No other American book approaches so near being a complete outline of sociology from a prevailingly ethical point of view. It should find a place in the library of every thoughtful reader and student.

From President ALVAH HOVEY, Newton Theological Institution: "No one can take up the volume and look at its pages without pleasure. The style of President Hill is clear as crystal, the analysis natural, the progress of the thought constant and rapid, the conclusion inevitable and encouraging. It deals with questions of enduring interest in a manner which goes very far towards satisfying reason, conscience, and the heart."

From THE BEACON, Boston: "Catholics and Protestants alike will find it pleasant and profitable reading."

From JOHN BOYLE O'REILLY (in Boston Pilot, October, 1888): "A remarkable book."

From THE INDEPENDENT, June 28, 1888: "In the sociology and political economy involved in his subject the author is conservative, and not at all inclined to be led away with the lure of a concealed socialism. His lectures are eminently suggestive, and have been as broadly thought out as they are closely applied."

From THE BOSTON POST, Sept. 17, 1888: "ROBERT ELSMERE" and this book have kinship: the one a novel by a "come-outer," the other a careful exposition by a stay-inner: yet they are similar in purpose, and their common aim is the showing forth of the fitness of Christianity for the needs of actual life. President Hill in the main exhibits not only scholarship, but good sense, breadth, and fairness."

From THE LITERARY WORLD, Boston, July 7, 1888: "Dr. Hill considers the problems of labor, wealth, marriage, etc., in a manner at once comprehensive of all of the leading principles, and as fresh as the triteness of the subject will allow."

From THE PRESS, Philadelphia, June 25, 1888: "The leading views regarding the nature of society, ancient and modern, are comprehensively stated, traced in their development, and intelligently criticised from a scientific, Christian, and American point of view."

From THE CHRISTIAN AT WORK, Sept. 6, 1888: "Dealing as this volume does with some of the most pressing problems of to-day from a Christian standpoint in a large-hearted and liberal spirit, its mission to do good will be limited only by the restriction of its circulation."

From THE STANDARD, Chicago, Aug. 9, 1888: "Dr. Hill's lectures are admirable in tone, breadth, moderation, and firm hold of New Testament teaching."

For sale by all booksellers, or mailed postpaid to any address on receipt of price.

SILVER, BURDETT & CO., Publishers, 6 Hancock Ave., Boston.

The Clearest and Most Practical Treatise on Ethical Science which has appeared in recent years.

ROBINSON'S

Principles and Practice of Morality;

OR,

Ethical Principles Discussed and Applied.

By EZEKIEL GILMAN ROBINSON, D.D., LL.D.,
President of Brown University.

12mo. CLOTH. - - PRICE, $1.50.

From Dr. PEABODY, of Harvard University (writing to the author): "I appreciate the ability, the candor, the large generosity with which you treat all open questions, and the abundant materials with which you furnish your pupils for the formation of their opinions. While I recognize your own profoundness as a thinker and experience as a teacher throughout the work, in statement, definition, and discussion, you have given to the treatise almost the merit of a formal history of Ethical Science."

From Rev. NATHAN E. WOOD, D.D., of Brooklyn, N.Y.: "The work seems to me so thoroughly admirable in plan, in method of treatment, and in the exclusion of inconsequent material, that it ought to command a wide introduction. I am delighted that we have, at last, a thoroughly good text-book in Ethics."

From Prof. GEORGE P. FISHER, D.D., LL.D., of Yale University: "It is clear and vigorous in style, comprehensive in its plan, and instructive and interesting in its contents. I congratulate you on the production of so able and valuable a book."

From President STRONG, of Rochester Theological Seminary: "It is certainly the most clear, sound, succinct, and able treatment of the subject now accessible to students, and it ought to win its way at once to general acceptance and circulation. Such a book has long been needed."

From President ALVAH HOVEY, Newton Theological Institution: "It seems to me to be an able treatise, full of sterling thought, forcibly and clearly expressed."

From President JAMES M. TAYLOR, Vassar College: "It is clear, closely reasoned, stimulating. I heartily commend it for use in our colleges."

From THE CONGREGATIONALIST, July 24, 1884: "It is comprehensive and thorough, candid and clear, and the expectations aroused by the author's well-known reputation are fully satisfied."

From ZION'S HERALD (Methodist), Boston, May 9, 1888: "It is a timely book, such as might be expected from its eminent and learned author, and we predict for it extensive use in the colleges of the country."

From THE NEW YORK EVANGELIST, June 14, 1888: "As a strong, original, and useful treatise, this work will rank among the best."

From PUBLIC OPINION, June 9, 1888: "It is a brief, well-arranged, and logical treatise on Moral Science. The style is clear, direct, and forcible. We know of no better brief treatise on this important subject."

From POP'L'R SCIENCE NEWS, June, 1888: "As a text-book on this important subject, President Robinson's 'Principles and Practice of Morality' cannot fail to attract wide attention."

From THE CHRISTIAN INQUIRER, New York, May 3, 1888: "Dr. Robinson's exposition of the facts and philosophy of ethics is not surpassed in clear thinking, exact definition, and familiarity with historical ethics, by any work which we have seen."

For sale by all booksellers, or mailed postpaid on receipt of price.

SILVER, BURDETT & CO., Publishers, 6 Hancock Ave., Boston.

ANGELES, CAL.

STUDIES IN PEDAGOGY.

BY

THOMAS J. MORGAN, A.M., D.D.

Principal of the Rhode Island State Normal School; author of "Educational Mosaics."

WHAT BETTER, WHAT GREATER SERVICE CAN WE OF TO-DAY RENDER THE REPUBLIC THAN TO INSTRUCT AND TRAIN THE YOUNG? — *Cicero.*

BOSTON:
SILVER, BURDETT & COMPANY,
1892.

COPYRIGHT, 1888,
BY SILVER, BURDETT & CO.

PRESSWORK BY BERWICK & SMITH, BOSTON, MASS.

TO

THE MANY WHO HAVE BEEN MY PUPILS

IN THE

NORMAL SCHOOLS AT PERU, NEBRASKA; POTSDAM, NEW YORK

PROVIDENCE, RHODE ISLAND,

THIS VOLUME

IS

AFFECTIONATELY DEDICATED.

Man, it is within yourself, it is in the inner sense of your power, that resides nature's instrument for your development.

PESTALOZZI.

The price of retaining what we know is always to seek to know more. We preserve our learning and mental power only by increasing them. HENRY DARLING.

In fact, what we learn at school and in college is but the foundation of the great work of self-instruction and mutual instruction with which the real education of life begins when what is commonly called the education is finished. EDWARD EVERETT.

Patience, diligence, quiet, and unfatigued perseverance, industry, regularity, and economy of time, as these are the dispositions I would labor to excite, so these are the qualities I would warmly commend.

HANNAH MORE.

Whatever I have tried to do in life, I have tried with all my heart to do well. CHARLES DICKENS.

PREFACE.

PLATO has said that "man cannot propose a higher and holier object for his study than education and all that pertains to education." One of the most fascinating phases of the subject is that which relates to the work of teaching. Nothing so prevents monotony and drudgery in the schoolroom as a lively interest, on the part of the teacher, in the philosophy of his work.

One of the interesting signs of the times is the rapid increase in our country of pedagogical literature, either as translations from foreign languages, or as original productions of American authors. This indicates a growing popular interest in the great question of the proper education of American youth.

This volume is the outgrowth of a good many years of observation, reading, thinking, and experience, and the author hopes that, while consisting of mere "studies," it may yet be considered as at least an earnest effort to contribute toward the promotion of higher ideals of education and better methods of teaching.

e. 3-06

The author acknowledges his indebtedness to the writings of Rousseau, Comenius, Compayré, Fitch, Tate, Jacob Abbott, Page, Joseph Payne, Rosenkranz, Froebel, W. T. Harris, and many others. He takes especial pleasure in acknowledging his obligations to two former teachers, E. G. Robinson, D.D., LL.D., now president of Brown University, and M. B. Anderson, LL.D., president of the University of Rochester. He acknowledges also the courtesy of Dr. William A. Mowry, editor of "Education," for the privilege of using certain matter here which was formerly prepared for his magazine.

He was glad to find in Compayré's Lectures on Pedagogy, translated by Professor W. H. Payne, a plan of treatment similar to the one that he had already adopted.

He takes this occasion to express his appreciation of the kind reception accorded by the critics and the public generally to his first volume, Educational Mosaics.

Thomas J. Morgan

PROVIDENCE, RHODE ISLAND,
March, 1889.

TABLE OF CONTENTS.

	PAGE
I. — Education	9
II. — Training	19
III. — Training the Senses	41
IV. — Training the Imagination	51
V. — Training to Think	63
VI. — Training the Sensibilities	77
VII. — Training in Language	95
VIII. — Training the Will	111
IX. — Training to Learn	125
X. — Training in Music	145
XI. — Training to Use Books	157
XII. — Training for Freedom	167
XIII. — Methodology	179
XIV. — The Man and his Method	191
XV. — Method in Questioning	199
XVI. — Method of Teaching Arithmetic	215
XVII. — Examinations	239
XVIII. — The Ideal Schoolmaster	253

PAGE

XIX. — The True Function of a Normal School . 277

XX. — Advice to Young Teachers 311

1. The Teacher's Calling 313

2. The Significance of Difficulties . . 319

3. Independent Thinking 321

4. Culture, Citizenship, Character . . 326

5. The Work of the Primary Teacher . 331

6. The Teacher's Growth 334

7. Training for Citizenship 338

8. A Professional Spirit 341

9. Character Building 343

10. A Plea for the Public Schools . . . 348

I.

EDUCATION.

THE attainment of perfect manhood as the actualization of the freedom essential to mind constitutes the nature of education in general. J. K. F. ROSENKRANZ.

EDUCATION is the process of making individual men participators in the best attainments of the human mind in general; namely, in that which is most rational, true, beautiful, and good.

WILLIAM WHEWELL.

THE object of the science of education is to render the mind the fittest possible instrument for discerning, applying, or obeying the laws under which God has placed the universe.

FRANCIS WAYLAND.

THE true end of education is to unfold and direct aright our whole nature. Its office is to call forth powers of every kind — power of thought, affection, will, and outward action; power to observe, to reason, to judge, to contrive; power to adopt good ends firmly, and to pursue them effectively; power to govern ourselves, and to influence others; power to gain and to spread happiness.

W. E. CHANNING.

Studies in Pedagogy.

I.

EDUCATION.

The aim of education is to give to the individual all the perfection of which he is susceptible. — Immanuel Kant.

In the most general sense education is that which marks the difference between what a child is by nature at birth and that which he becomes by growth, training, and experience. In this sense the vital process of evolution by which the germinal power — body, mind, will — becomes unfolded and brought to maturity is a part of education. In this sense the word embraces as one of the greatest forces of education, Nature, including soil, climate, scenery, etc. The entire environment, nature, home, society, etc. etc., is one vast educational agency. The influence exerted upon the child by these varied and diverse forces are so intimately blended with the conscious efforts of teachers to train and instruct him, that it is impossible to separate them except in thought. The manner of the teacher is as potent with his pupils as his word, and his example outweighs his precepts.

Ordinarily, however, we mean by education the effect produced upon the young mind by those who purposely seek to influence him. Especially, and in a still narrower sense, education is restricted to the direct influence of school-teachers and schools.

We sometimes say of a man who is not a schoolman that he is uneducated, or, at least, self-educated. But this is unphilosophical. No man who has acquired knowledge and strength or skill is uneducated; and every man who has either knowledge, skill, or power is in a very real sense self-educated, however much help he may have received from others. This will be made more evident by what follows.

1. Education implies knowledge. An educated man is a man who knows. Knowledge is either a means to an end, or an end in itself. Very many facts involved in trades, and even in the learned professions, are acquired, not for their own sake, but for the sake of the use that the learner can make of them. On the other hand knowledge may be acquired simply for the sake of knowing it. The man is more highly educated who loves truth for its own sake, studies simply for the sake of knowing, seeks rather to comprehend knowledge as science than as means to some practical end. Practical education, industrial education, must ever be regarded as lower than a liberal training or philosophical culture. It can make no difference in what way knowledge is acquired, whether from consciousness, reflection, observation, books, or teachers, provided only that

one be certain that he has it. To know a thing is to be certain of it. The Indian, who by personal observation has acquainted himself with the forms, habitats, and habits of wild animals about him, so that he knows them, is so far an educated man. The blacksmith, who by experiment and imitation has learned how to heat iron, cut, bend, and shape it into a horseshoe, is to that extent educated. The child that has committed to memory the multiplication table or the Ten Commandments with their meaning has so much knowledge — education.

The practical value of knowledge depends necessarily upon circumstances. The depth of the harbor at Glasgow or the location of an island in the Pacific may be, and probably will be in most cases, utterly without practical value to the student of geography unless he should some day be a pilot or a sea-captain. A knowledge of the writings of Confucius is to an American youth barren of practical utility, while to a young Chinaman it may be the one thing upon which hinges his appointment to office and his success in life. Practical education may be said to consist in an accumulation of those facts which one is most likely to need in the daily duties of life. There are some facts of practical use to everybody, such as those pertaining to climate, health, domestic economy, social customs, common forms of business, etc. The rudiments of reading, writing, spelling, language, geography, arithmetic, physiology, civics, and history enter so largely into the common intercourse and occupations of everyday life that a man

living in the midst of society who is ignorant of these can hardly be said to be an educated man, whatever his attainments in other directions. In addition to this general knowledge the farmer needs to know facts about farming, the tailor about tailoring, the sailor about navigation, and the lawyer about law and codes of procedure.

For purposes of general education one should have an acquaintance with those branches of knowledge which are of most general interest, which give to one the highest topics of thought. The chief facts and general principles of art, literature, science, politics, and religion make up a body of knowledge that is essential to a liberal education.

Exhaustive knowledge in any department of human investigation is scarcely attainable by the specialist even, and is utterly beyond the reach of the many, while cyclopædic knowledge is but the dream of an enthusiast.

2. Education involves mental power.

The soul at birth contains certain great possibilities, latent forces, which, by exercise, experience, culture, are to be educated, drawn out. Education is the evolution of the hidden germ, the unfolding of latent power, the calling into active exercise of the capacity to feel, know, reason, and act. It is putting the myriad-sided soul into contact with the myriad-sided universe, so as to bring it to self-consciousness. It is the investment of the soul with the vast realm of thought, feeling, action, power, authority, dignity, and enjoyment, to which it is rightful heir. Man is God's

image, gifted with powers and prerogatives second only to his own. Education is that process by which God actualizes in the soul the lofty conceptions embodied in his thought of man: the liberation from the crude, rough-hewn marble of the imprisoned angel: the elaboration into form and imperishable color of the rude sketch on the canvas: the condensation of mist, cloud, and rain into one vast ocean, whose mighty currents thrill at the touch of his fingers with deep resounding roar, which is joyous with his praises, and from whose surface, in sunshine and in storm, is reflected the glory of his own countenance. The uneducated, undeveloped soul is little removed from the clod, scarcely better than the brute, merely a foreshadowing, a dim, vague prophecy of itself as matured. Helpless, ignorant, unconscious, it is an object of pity. As an untutored savage, delighting in the low pleasures of mere animal existence, ignorant of fire and tools, without means of communication beyond a few signs and a limited jargon, with neither literature, philosophy, nor religion; homeless and Godless, the sport of the elements, and the victim of disease; naked, filthy, lazy, cruel, and bloodthirsty, he sinks below pity to become an object of abhorrence and contempt.

The man who can use his faculties in acquiring knowledge, in thinking and in expressing his thought, is so far an educated man. Facility in the use of mental powers, accuracy in observing, tenacity of memory, correctness of judgment come from practice. Every one must learn to employ his powers

aright. This is education. Abraham Lincoln, in the struggle for existence during his frontier life, in the sharp conflict with rivals and opponents in political and legal contests, and in his study of Euclid, learned to think and to clothe his thought in forcible English. This education fitted him to become the nation's leader in the hour of its great peril.

The student engaged in solving problems, analyzing sentences, investigating phenomena, writing essays, learns to use his mental powers, and so is educated.

The mother, busied in the practical duties of the home, in the management of, and providing for, her household, learns to use her mental powers. She observes, reflects, remembers, imagines, reasons, talks, and argues, and thus calls into exercise, to a limited degree perhaps, but really, all her faculties, and so acquires that power of using her mental endowments which is of the very essence of education.

The pupil that in school is content with memorizing facts, dates, definitions, rules, principles, which he takes on authority without using any power but memory, may be educated in the sense of having, so to speak, a knowledge of what he has learned, or perhaps of having a trained memory, but he is not educated in the higher sense of having a trained mind. His power to observe, to think, and to reason is not necessarily called into action.

Education does not create: it can only unfold or draw out. It evolves what is involved by the Creator. It may increase the efficiency of the native endowments, but it does not add to their number.

The possibility of the development of the faculties by education is limited. Education is not omnipotent. The differences among men are not simply differences of culture. They are inherited differences, and cannot be effaced by any system of training any more than a pear-tree can be converted into a grapevine by cultivation.

3. Education involves the proper use of the sensibilities and conscience. The power to feel is as much an original endowment as the power to know, and is quite as susceptible to education. The heart is bigger than the head and plays a larger part in life's drama. No education is complete that fails to train the moral nature.

Men differ widely in the range of their sympathies. One is interested in the welfare of himself alone, another embraces in the scope of his interest only his family, kindred, and neighbors, while still another thinks nothing foreign to himself that belongs to humanity.

The range of enjoyment varies greatly with different individuals and marks a difference in the degree of their culture. The character of one's education has very much to do with deciding whether he shall find his pleasures on the low plane of the senses or on the higher levels of intellectual and spiritual enjoyment. The variety and intensity of his pleasures depends also upon his culture.

4. Education implies a firm will. In nothing is the difference in education shown more fully and

impressively than in the state of the will. The untrained will is fitful, unsteady, unreliable Proper training gives fixedness of purpose, loftiness of aim, purity of motives, patience, fortitude, firmness, and sustained power.

It will thus be seen that education as administered by the wise teacher seeks to secure physical health, mental activity, and moral soundness. *Sana mens in sano corpore.* It seeks both to form the mind and to inform it. It aims to secure complete manhood and womanhood; to fit men and women for the performance of life's duties, high and lowly; to promote at once usefulness and happiness. It strives to develop self-control; to aid the human being to adjust himself wisely to his environment that he may obey nature and control it; benefit society and enjoy it; serve the state and reap its privileges.

To be an educated man in the highest sense is to be a complete man — strong, active, intelligent, wise, good, useful, and happy.

II.

TRAINING.

A WELL-MADE head is better than a head well filled.

MICHEL MONTAIGNE.

THE primary principle of education is the determination of the pupil to self-activity.

SIR WILLIAM HAMILTON.

THE sciences should be employed only as an instrument for perfecting the reason.

NICOLE.

WHAT a man has learnt is of importance, but what he is, what he can do, what he will become, are more significant things.

ARTHUR HELPS.

UNFORTUNATELY education amongst us at present consists too much in telling, not in training.

HORACE MANN.

II.

TRAINING AS AN ELEMENT IN EDUCATION.

We take education as aiming at the formation of faculty. — SULLY.

HE who would gain a correct idea of the magnificent Mount Ranier must view it from many points. When it first bursts upon his enraptured vision, as he approaches from the south, it seems like a mighty king, surrounded by his courtiers and glittering body-guard. To one who stands upon the deck of the steamer in the harbor at Tacoma, it looks like a solitary pyramid, majestic, magnificent, rising directly out of the deep waters of that wonderful inland sea — Puget Sound. When the spectator has moved far down the sound, and looks at it from a hundred miles away, the bold mountain, now little more than a mass of snow, flashes in the sunlight, the same, yet how different! While he, who approaches its base, is charmed and terrified by turns, as it allures him by its lofty summits, or hinders him by its mighty glaciers. With each passing season, each changing day of storm or sunshine, each varying hour of darkness, twilight, dawn, or high noon, it presents a new aspect and awakens new emotions. One must "summer and winter" in its grand presence to be able to say "I know and love it."

So does one need to study the work of the teacher in its varying phases in order to understand truly its many-sidedness, and full significance. There is nothing in nature so grand, so beautiful, so full of absorbing interest to an appreciative observer, as is found in the moral world, in the sublime work of educating an immortal soul.

It is the purpose here to consider not the teacher's work as a whole, but only one phase of it, that which may be called training: to explain what is meant by training, show its great importance, and to indicate some of its hindrances and limitations.

Training is causing to act, drilling. It means to govern, lead, compel. Training, as a process in education, signifies such a control exercised by the teacher over the pupil as will lead him to so use his faculties as to secure their completest development. Training has for its immediate end the evolution of power. As treated here, it means the unfolding of all the faculties of the human being. The great mental endowments may be grouped under five heads, those of acquiring, understanding, reproducing, using, and expressing knowledge. We acquire knowledge by means of observation, intuition, reflection, and testimony. The child has been trained when he has been led through such exercises that he can acquire accurate and comprehensive knowledge with ease and facility. The infant and the untutored savage have the same faculties and the same sources of knowledge that are possessed by an Agassiz or a Milton. The babe has no knowledge and little ability to acquire

it. The savage has a very limited range of information, and gains knowledge with slowness and pain. The scientist, the philosopher, the experienced jurist acquire knowledge with great facility, accuracy, and pleasure. Training, so far as it relates to the observing powers, means the leading of the pupil to so use each of his senses as will ensure its highest development. The trained man sees, hears, feels, smells, and tastes in such manner as to extort from nature her secrets. He knows the objects about him, or at least can know them. The work of the trainer is less the giving of information about objects than calling into vigorous and healthy exercise the perceptive powers. He is not to "give object-lessons," but to train the pupil to skill in studying objects.

The pupil understands the full import of the facts accumulated only when he has thought profoundly about them, that is, when he has by analysis, comparison, abstraction, judgment, reasoning, etc., comprehended them in their parts, relations, uses, history, etc. The difference between telling and training, can perhaps not be illustrated better than by reference to the thinking powers. It is one thing to communicate to a pupil the results of thinking, and quite another to train him to think. There are several stages or states of the intellect in relation to knowledge. They may be illustrated by an example from geometry. One child may commit to memory the proposition that "the sum of the squares described on the two sides of a right-angled triangle are equal to the square described on the hypothenuse," with a vague

notion of its meaning. Another may regard it as a fact which he clearly apprehends, and accepts on authority. A third may not only believe it to be true, but may be able to follow the line of reasoning, step by step, from the beginning to the "Q. E. D." A fourth may devise a method of proof of his own; while a fifth, observing the triangle, may divine the truth, state the proposition, and originate the demonstration of it. Training aims to lead the pupil to this highest stage, where he not only sees facts, but so brings to bear upon them his powers of thought as to comprehend them. Knowledge, thus acquired and mastered by the understanding, can be reproduced by the memory and the imagination. Training seeks to render the memory facile, retentive, accurate, comprehensive, and ready, and the imagination vivid and true to nature.

But knowledge has a practical value. It can be applied to the mechanical industries and to the fine arts. The mind has been trained when it can make a ready application of its accumulated store of knowledge to the daily needs of life. All education should, in a sense, be industrial. That is, the pupil, who is trained rather than taught, is led to see that books are only keys to nature. Botany is only the study of plants, and enables him to understand and use the things that grow in his field and garden. History gives him a clearer understanding of his neighbors and makes him a better citizen. Training transmutes knowledge into wisdom, science into skill, philosophy into fact.

One of the highest achievements of the human soul is that of expressing, in appropriate language, its knowledge and thoughts of facts and principles and their relations. Next, certainly, to the power of thought is the power of language. Ability to express thought and emotion, so as to convey to others the exact state of one's mind, and to awaken in them corresponding states, is very unusual even among educated people. Composition clear, forcible, pleasing; correct description, accurate narration, convincing argument and persuasive appeal, elegant conversation, and winning oratory are accomplishments possessed by few. Training aims to call the powers into exercise, so that the student can both write and speak well. One may parse correctly and speak incorrectly; may be well versed in the principles of rhetoric and have little power of language; may understand all the moods of the syllogism and be able neither to convince nor persuade. Training gives him mastery over that subtlest of instruments, human speech.

Training seeks to lead the pupil through such exercises or operations as will tax each of the powers, or faculties, and not one only. The soul is endowed with sensibility, conscience, and will as well as with intellect. A fully developed soul, that is, a well-trained soul, not only knows but feels and not only feels but acts. The appetites, desires, affections, and emotions are as much integral parts of the soul as thoughts or volitions.

I may illustrate the difference between teaching

and training by describing a scene I once witnessed in a college classroom. The teacher was the honored president of the institution, a man renowned for learning and venerable in years and character. His pupils were seniors. The subject, ethics. With a book open before him, he questioned the students one by one as to what was said on the various parts of the subject under consideration, while he recorded the marks to correspond with the answers. During the period of half an hour I think I heard no single recitation that indicated anything more than a feeble effort at mere recollection. There was not only no attempt at independent thinking, but there was not even a show of a serious endeavor to master the thought of the author. Meanwhile these students of ethics were indulging in most *un*ethical conduct, levity, frivolity, disrespect to their teacher, indifference to the subject, want of self-control and of all moral earnestness.

Training seeks to awaken and regulate desire for society, for approbation, property, life, happiness, etc., together with all right affections, such as patriotism, filial affection, philanthropy; noble emotions, such as love of the beautiful, love of the sublime, reverence, etc. Training seeks for its ultimate end the awakening and disciplining of each and every endowment, so that the soul, with all its powers developed harmoniously and to the highest degree, stands forth complete, a symmetrical whole.

An instructor can only impart a portion of his own limited store of knowledge; one who causes to learn

may lead the child to the exhaustless fountains where he may drink his fill. A trainer, though a weakling, may see a giant develop under his wise direction.

Training then is only a part of the teacher's task, not all of it. He is to guide and instruct. Each of these is an important part of his work, and no discussion of teaching can be complete or philosophical that ignores or belittles either of these. There was indeed a time when books were scarce, and the teacher's memory was the great storehouse of knowledge, and he a walking encyclopædia; when instructing, or mere giving information, constituted a more important part of his work than it does to-day. The multiplication of books and the increase of facilities for gaining knowledge has doubtless greatly diminished the importance of this part of his work, but it has by no means done away with it.

His chief business, however, is not to give information, not to impart knowledge, nor even to cause the pupil to learn; but it is to train the pupil's powers. Let me suggest some reasons for this statement.

1. Training, more nearly than any other work of the teacher, meets the ideal of education. By the concensus of opinion among the ablest thinkers on this subject, a man is educated only when his powers are developed. Here is Landon's definition of education: "Taking into account both functions of education, we may say that when a person has stored his mind with all serviceable materials and cultivated his faculties to such an extent that he is able to make a vigorous use of the knowledge he possesses; when

his moral power has become so developed and experienced that he not only has a delicate appreciation of duty but his conscience gives its sanction to that which his intelligence dictates; when his will has been strengthened to such a degree that he is enabled to act with decision and bear with constancy the strain of difficulty and disappointment; when he recognizes his relationship to a Superior Being and realizes that his every action may have an influence not only for time but for eternity; and lastly, when his mind has acquired such susceptibility to the beauties both of nature and of art that it adds to his pleasures and softens his cares, — then he is educated." The underlying thought in this is development, or such an unfolding of the powers of an individual as can come only from exercise. The direction of this exercise by the teacher, which results in this exalted state of the pupil, is what is meant by training. No other part of his work so nearly corresponds to the high ideal of education as this.

2. There can be no successful work of instruction without a preliminary work of training. All our knowledge of the external world comes to us through the senses. Knowledge is primarily immediate, conscious contact of the soul with things. Ideas result from sense impressions. Thoughts spring up from the contemplation of things. The mind must apprehend from its own inherent energies. Every act of acquisition is an act of mental exercise. It is by this use of its varied powers of perception that the mind

increases in capacity and strength. The elements of knowledge, ideas of form, color, size, weight, extension, odors, tastes, etc., must of necessity be intuitive, that is, must come by observation of things. They cannot come by verbal description. Instruction cannot convey them. Elementary ideas must be awakened in the mind by presenting the appropriate objects. Training the observing powers underlies, therefore, all instruction. It is fundamental, a condition precedent. There can be absolutely no progress without it.

If it should be said that the time for training the perceptive powers is in childhood, and that this work belongs preëminently to the nursery, the kindergarten, and the primary schools, and consequently does not concern the teachers in the higher grades, the reply is not far to seek. In the first place the work is either not done at home and in the lower grades, or, if done, is done poorly. Every child, by the necessities of the case, is compelled, of course, to use his senses. They do indeed grow by exercise. But it is the common observation of teachers that children, on entering school, have a very imperfect use of these. Teachers in colleges, as well as those who teach in high and grammar schools, find a lamentable lack of control, on the part of pupils, of their observing powers. Besides, even if the child had been under systematic training in the nursery, and in the lower grades of school, there would still remain the necessity for a higher order of the same kind of training in higher grades. Observation be-

comes more minute, complex, and sustained as the pupil advances in his pursuits. Training should fit him for the best work, in all stages of school life.

Again, the acquisition of knowledge, which begins in sense perceptions, is only complete when all the powers of the mind, memory, imagination, and the reasoning faculties have done their work. Merely seeing a thing is not getting a knowledge of it. It must be revolved in mind, thought about. Committing a thing to memory is not learning it any more than swallowing food is taking nourishment. The food must be digested and assimilated to be of real service. Knowledge must undergo an analagous process before it becomes brain fibre or spiritual power.

Before pouring corn into the hopper, the miller sees to it that the millstones and all connecting machinery is in proper working order. The overseer does not begin to thrust his cotton into the receptacle till all the varied and complicated machinery is in readiness, so that the carding, spinning, twisting, and weaving may go forward together. The conductor does not cry "All aboard," till he knows that the engine is ready to start.

Mere lecturing a child, whose interest is not awakened and whose powers are not active, is about as effective as attempting to fill a jug by pouring water on it while it is corked. Knowledge merely lodged in the memory is about as serviceable as money locked up in a vault. Money to be helpful must be in circulation in the channels of trade; knowledge to be of worth must enter into the circu-

lation of thought. There can be no effective teaching, or instructing, or imparting of information, that is not preceded or accompanied by the training of the thinking powers.

The high function of the imagination, in facilitating the reception of information, is imperfectly understood or appreciated. Without the ability to form clear, distinct mental pictures of objects and scenes described, which are absent in space and distant in time, the process of learning is impossible. The pupil's progress will be in proportion to the normal activity of this great endowment. But the imagination, like all other faculties, is largely dependent for its efficiency upon training.

That there can be no assimilation of information without a vigorous exercise of the reasoning powers, in every case where the information involves reasoning processes, is equally certain. Many students, whose reasoning powers have not been developed, and who, consequently, have attempted to commit to memory truths which should be reasoned out, give up in despair, and abandon the effort to complete a course of liberal study.

Edward Everett Hale says that his teachers disgusted him with the classics, and with themselves too. A distinguished college president said to me, quite recently, that he would like to begin at the beginning of his education and go over the entire course. "But," said he, "I would like to begin by shooting some of my early teachers, who so discouraged me that at one time I abandoned the idea of

going to college." Such experiences are not rare. It is very common for teachers to accept memoriter recitations in geometry, teach arithmetic as a system of rules, and history as a body of facts, perform experiments before a class of young men, who have no appreciation of what they signify and no ability to follow the course of reasoning involved. Latin and Greek authors are read simply as parsing exercises, and even logic is used as gymnastics for the memory.

All work of instruction should proceed by constant reference of all new truths to the primal elements of knowledge gained through the senses and to the elementary truths grasped by the intellect. A child may listen to lectures, may devour books, may cram his memory with statements, but unless, by previous acquisition, he can grasp the significance of them, they are all to him merely "words, words, words." It is only as the mental powers have been trained that they are able really to apprehend and comprehend the instruction given. Very much of teaching is wholly lost because of the utter inability of the pupil, for lack of training, to comprehend it. No method of instruction can make amends for this fatal defect. Information can be imparted only in proportion as it can be assimilated. The pupil must not only consent but he must clamor for knowledge. There must be hunger, thirst, eager craving that involves the fullest activity of all the powers. Training must prepare the way for, and accompany, instruction at every step.

3. It may be urged in behalf of training that it best prepares the student for the active duties of life. The common view of education restricts it too much to storing the memory with knowledge. The paramount duty of the student is to "get his lessons," and that of the teacher to see to it that he does get them. When the child first enters school a textbook is put into his hands; he is set to mastering words, learning definitions, committing rules, and memorizing formulas. Recitations consist largely in reproducing the statements of the book in the language of the author. Examinations are tests to see how much the pupil has remembered. Marks are given on the basis of memoriter recitations. Standings are determined by marks. Students are ranked, promoted, graduated, on percentages of correct answers given to questions involving chiefly an exercise of memory. The arrangement of our schoolhouses, the organization of our schools, the size of the classes, the number of teachers, the character of our schoolbooks, the kind and quantity of apparatus, the machinery of supervision, and the employment of teachers, all are in many instances dominated by this idea. Education is knowledge. A child is educated when he is made acquainted with certain facts. Now what results? Much of the knowledge gained is soon forgotten. Much of it is of such a nature that it awakens little or no interest. The work is done perfunctorily, the student expending upon it the minimum of energy. When he leaves off school, he leaves off learning. Much of what he carries with

him has no relation to practical life, or if it has, he fails to see that relation and is unable to apply his knowledge.

Hence the criticism that the schools are not practical, that they do not fit students for life's everyday duties. I need not say that much of this criticism is narrow and ill-founded and does not harmonize with the facts. Nor need I say that the characterization here given is by no means universally true. There is much admirable teaching, there are multitudes of good schools, there are thousands of successful teachers. It nevertheless remains true that the evil here spoken of is real and widespread and calls loudly for remedy. This remedy is found in part in the theory here advocated that teaching should consist rather in training, and aim at power more than at information. The mischievous aphorism that "knowledge is power" should be replaced by truer theories. Knowledge may generate power, but it does not necessarily do so. We may reach power by means of knowledge. Knowledge is only a means to an end, it is not the end. It is the instrument of power, not the power itself. It is but the fulcrum or the lever to which power is applied. The power resides in the mind. Knowledge is valuable chiefly as an agency for generating mental energy.

The great test in life is rather what a man can do than what he knows. Can he use his eyes? Has he good judgment? Is he a man of commonsense? Can he think? Does he reason correctly? Has he power of adaptation? Can he organize? Has he executive

force? Is he practical? These are the test questions that are put to the graduates of our schools. Can the sweet girl graduate cook a dinner, sweep a room, or superintend a house? Does she have an intelligent interest in passing events? Has she robust health, good habits, self-reliance, energy, and power of endurance? Can the young man lay aside his diploma and keep his father's accounts, write an article for the newspaper, make a business trip to Chicago, give an intelligent account of the morning news? Can he lend a hand at home, and turn to some good account in the daily duties of life some of the accumulated stores of knowledge amassed in years of study? Does his education render him more industrious, more skilful and efficient, more ingenious, more persistent, more practically masterful in whatever he undertakes?

If he has been trained to use his senses, to acquaint himself with natural phenomena at first hand; if he has been taught to think, to make careful comparison, noting essential differences and significant similarities, making patient inductions and wise generalizations; if he has been led to form fixed habits of thoughtfulness, self-reliance, moral earnestness, inflexibility of purpose, persistent industry, promptness, punctuality, fidelity, unswerving devotion to duty; if, in short, as a result of his school life, his training has produced a well-rounded character, he will be able to meet all the reasonable demands that society can make upon one who lacks practical experience in actual business. He will readily

acquire skill and efficiency in any calling for which his special talents have fitted him. Training gives potency to all the soul's possibilities.

4. The emphasis thus laid upon training gives dignity to the profession of teaching. Those who regard the work of the teacher as consisting chiefly in hearing lessons, or in seeing that pupils commit certain things to memory, or at best in explaining the hard points and giving information, require only a minimum of qualification in the teacher. Any one can teach who knows enough. The measure of teaching ability is knowledge. Many of the examinations of teachers are simply a quest after the contents of the memory. The remark is often made that "it does not require much scholarship to teach our school: we have no advanced pupils." The wages paid to teachers and the estimate placed upon their work is determined by the same low standard. Especially is the evil effect of this mischievous notion seen in the kind of teachers often selected for primary schools.

The children, being young, are necessarily very ignorant, consequently any person who has even the rudiments of a common school education is supposed to be capable of teaching them.

When, however, the work of the teacher is viewed as that of a trainer, one who is charged, not with the duty of simply acquainting the pupils with a few elementary facts in spelling, reading, writing, etc., but is intrusted with the all-important work of calling into healthful exercise all the latent powers

of the pupil, of forming his habits and molding his character, it takes on a new aspect. That this latter view is higher than the former is seen from the following.

The work is much more complex. It involves all that is involved in the other and much besides. The trainer is to impart information, see that the memory is stored with knowledge, and that this knowledge is digested, assimilated, and the mental energy generated by it is wisely directed.

It requires a more thorough acquaintance with the mind and its laws of development. One who is to be a trainer of the mind must be a psychologist. A fireman may do his work by simply shoveling the coal into the open mouth of the furnace, but the engineer must needs know the parts and powers of his engine.

It requires of the teacher a wider range of knowledge, more ingenuity, greater persistence, a more careful adaptation of means to ends, and more generous sympathies. It kindles in him a nobler enthusiasm in his work. He ceases to be a drudge, a packhorse, a retailer of other men's thoughts, and becomes an artist, a co-worker with God, in calling into exercise all that is noblest and best in that grandest of the Creator's handiwork, a human soul. His work borrows a glory from the higher world.

That there are hindrances to the realization of this ideal is too evident to every experienced teacher. The diversity of minds to be trained, the dreadful forces operating to nullify his efforts, the evident

sluggishness and perverseness of childhood, the low state of public opinion, the unreasonable demands made upon his time, the inadequacy of rewards, and the lack of facilities, all tend to hinder his work, chill his ardor, and lead him to content himself with following in the easier path of lesson hearing.

Only a word can be suggested here as to method. He who would be a trainer needs first to study profoundly the child as a most complex organism of body and soul strangely combined. He must begin his work by physical training, so that the body may be not only healthy, vigorous, beautiful, but become obedient to the slightest behest of the soul, at once its home, its refuge, its protector, its servant, its messenger, its mirror. The mind acquires skill by mastery over the body. The will, that great autocrat, that mighty monarch, the conquering hero that organizes armies, rules nations, overthrows kingdoms, founds empires, asserts its supremacy over the seas, and subdues to its control the mighty forces of nature, begins its career by self-conquest. Its first victories are victories over the body in which it dwells. "He that ruleth his own spirit is greater than he that taketh a city."

The great laws of method in training the powers of the soul may be epitomized thus. Each faculty is to be trained in its time, according to its own laws, by the means best adapted to it. All the faculties are to receive due attention, be trained symmetrically, harmoniously, and completely. The child's individuality is to be respected, and its training must be along

the line of its gifts, the utmost pains being taken to counteract evil propensities and to strengthen weak points. Exercise is the one universal law of growth that conditions all the trainer's work. Nothing is to be done for the child that he should do for himself. Self-reliance, independence, are cardinal virtues. Habit is second nature. The scale of ascent is, sensation, idea, thought, desire, volition, act, habit, character.

A few years ago I stood in the presence of that marvel of architecture, the great cathedral of Cologne. The stupendous scaffolding mounted far up into the air, and the great crane still stretched out its arms, as it had done for so long, to receive the precious burden. The click of the tools of five hundred workmen was heard day by day as the work went on. A few months later, in the presence of the emperor and before the eyes of all Europe, the cross was placed on the pinnacle of the spire, five hundred feet above the ground, and the great structure was complete. The cannon thundered, the sonorous organs sounded out their jubilee, the choirs chanted the Te Deum, and the vast throng uttered a solemn and joyous "Amen." Centuries ago the architect drew his plan and the workmen laid deep the foundations. Ages came and went; dynasties rose and fell; generations passed away; workmen perished, and one master-builder followed another through the centuries. Though interrupted, hindered, delayed, the work went on. The walls rose, the roof was placed, the carving was finished, the windows blazed with

glory, processions moved down the aisles, incense rose, and the architect's dream of a temple became embodied in stone — a thing of beauty, a joy for the world.

Every pupil that stands before a teacher has in him possibilities as far surpassing the grandest cathedral as a living soul surpasses dead matter. The great Architect has a plan for each soul. Every teacher enjoys the high privilege of contributing something, according to his wisdom and skill, in bringing to perfection the plan of God and of calling into bold relief every lineament of that spiritual temple that is to endure when cathedral walls have become a "shapeless cairn." We train for eternity.

III.

TRAINING THE SENSES.

THE foundation of all knowledge consists in correctly representing sensible objects to our senses so that they can be comprehended with facility.

JOHN AMOS COMENIUS.

THE first faculties which are formed and perfected in us are the senses. These then are the first which should be cultivated; but these are the very ones that we forget, or that we neglect the most.

J. J. ROUSSEAU.

HOW is it possible that the faculty of cognition should be awakened into exercise otherwise than by means of objects which affect our senses?

IMMANUEL KANT.

WHY should not every ear be as well trained as the ear of the musician? Why should not your eye and mine rival the eye of the marksman, the eye of the mariner, the eye of the general?

DR. BEARD.

III.

TRAINING THE SENSES.

Distinct and sharply defined sense impressions are the first conditions of clear imagination and exact thinking. — SULLY.

IT is a well-established maxim that all our knowledge of material things takes its rise in the senses. Our ideas of color must come through the eye ; of sound, through the ear ; of tactile qualities, through the touch. Each sense brings us into relation with a particular kind of knowledge which can be obtained through no other sense. The eye cannot give us distance, or the third dimension ; that is the province of touch.

Our processes of thinking, analysis, comparison, judgment, classification, imagination, inference, reasoning, are dependent upon the data given by the senses. If these are indistinct, imperfect, or few, our thoughts will be correspondingly few and imperfect. If the material furnished by the senses, the percepts of color, form, sound, taste, odor, etc., are accurate and abundant, our intellectual activity will be great and our thought products valuable.

The senses of children reach some degree of activity by the ordinary experiences of daily life, varying with the nature of those experiences, the character of the environment, the natural disposition

of the child, and the quality of parental training. But it is safe to say that the great mass of children, if left to these alone, would grow up with a very imperfect sense culture. It is a common observation that people "having eyes see not, and having ears hear not," the most obvious sights and sounds. It is a serious detriment to most college students who enter upon the study of natural science that they have no proper use of their senses.

There is need of early systematic training of each and all of the senses, so that a habit of observation may early be established and the mind become well stored with sense concepts. This training may be secured in a variety of ways. A commonsense series of object-lessons will awaken every sense and put the child in the way of observing the parts, qualities, and uses of common things. Human body lessons will acquaint him with the obvious facts of physiology, while lessons on animals, plants, minerals, etc., will not only acquaint him with many facts of natural science, but will train all his senses to a keen, wise observation of the world about him and awaken a curiosity in regard to nature's laws. Lessons in color, form, weight, size, time, distance, touch, smell, taste, etc., serve to accomplish specific ends in the general work of sense culture.

A few general principles may be enunciated as now well established and necessary to be observed in order to secure the highest results.

1. The appropriate objects must be brought into right relations with each sense. This must not be

left to accident: it is the work of the teacher. It requires thought, preparation, intelligence, and skill.

2. The pupil's interest must be awakened in the object so that he will direct his attention to it until the required percept is sharply defined.

3. Seeing must be accompanied by naming. Each new idea must have an appropriate name, and each thought must be embodied in a sentence. Sense culture depends on language culture.

4. So far as practicable sense ideas must be expressed in various ways. Colors must be mixed by the child and arranged in tasteful groups; forms must be drawn with pencil, cut in paper, molded in clay, or fashioned in wood. Things, objects, must be measured, counted, weighed.

5. The lessons should be graded so that they become more and more difficult, and tax the observing powers more and more severely, until the maximum of exercise has been reached.

6. It should be borne in mind all the while that the great final purpose of all this is discipline, training, power, habit, rather than knowledge; that we are not so much giving lessons, as drilling. The knowledge is incidental, and is to be acquired rather than to be imparted. The learning is the chief thing.

7. It is never to be forgotten that sense training is mind training. To observe well is to think well. One's power of observation is in proportion to his mental vigor and to his power of analysis, comparison, judgment, inference, etc. Ideas to be of value must be apprehended in their significance and

relations. The senses are trained in order that the understanding may be educated. Sense training is not an end in itself; it is a means to a higher end. While sense activity is first in point of time, it is not the goal sought for.

8. Sense training is to be distinguished from mechanical skill. Drawing may be used as a means of training the eye. It does this so long as it is subordinated to the purpose in hand. When drawing becomes an end in itself, an art to be mastered, however important it may be as an instrument for cultivating the taste, securing technical skill, developing invention, persistence, etc., it largely ceases to be, except incidentally, a sense training agent.

So does skill in the use of tools, power to excel in carpentry, smithing, wood-carving, and other industrial occupations. In these earlier stages they are agents in sense training; in their advanced stages, while still subserving this end in some degree, they become much more agencies for securing skill in construction than for developing a higher power of sense perception.

9. The training of the senses begun in childhood, and carried on by means of objects, familiar lessons in science, etc., is not to be abandoned when primary work is ended. The higher stages of mental power need, and make possible, a higher grade of sense activity. The simple object-lessons give way to a study of nature in her more difficult aspects. The laboratory succeeds the schoolroom, the scalpel, the

crucible, the blowpipe, the microscope, telescope, and spectroscope, and elaborate experimentation take the place of the simple observations.

To apply these principles let me cite

THE SENSE OF SMELL.

It is quite customary when treating of the senses to speak slightingly of smell and taste, as if they were of little importance in the economy of life. When the subject of training the senses is under consideration little is ever said of training the nose, while much space is devoted to educating the eye, the ear, the hand.

It is certainly true that smell does not rank with sight and hearing, and demands less care perhaps for its cultivation, and yet it plays an important rôle, and should receive its due share of attention in any scheme of education.

The function of smell is fourfold. Like the higher senses, it belongs to the intellectual endowments. It is a part of the mind. 1. Through it the mind is reached, roused, and quickened. The percepts and concepts gained through the sense of smell can be named, described, analyzed, compared, and classified. They may thus become the means of a good degree of intellectual life.

2. Smell is a source of knowledge. Through it the mind discerns those qualities in things which we denominate odor. This knowledge it can obtain in no other way. A surprisingly large number of objects have their own peculiar odor. The onion, the carrot,

the turnip, and all vegetables have characteristic odors; so have fruits, flowers, spices, and many gases, as well as animals, meats, etc. The knowledge of the kind, quality, and condition of things that can be obtained by the sense of smell is very extensive. Not only the druggist, the chemist, the cook, but others, likewise, make much use of the nose as a source of knowledge, having its own special scientific interest.

3. But smell performs a highly important work in enabling us to detect foul, hurtful odors. The nose is placed at the entrance to the mouth as a sentinel to guard it from receiving unwholesome food. It is the watchdog of the stomach.

4. A fourth scarcely less important function of smell is that of giving pleasure. The nose is capable of ministering to our happiness even more perhaps than the touch or the taste. One with a cultivated sense of smell has delights that another knows not. Sully finely remarks: "The cultivating of the sense of smell, of sensibility to the odors of flower and herb, pasture and wood, summer and autumn, is an important ingredient in the formation of æsthetic taste, and more especially the development of the love of nature, which is a prime factor in all real enjoyment of poetry."

There is even a greater need for some systematic training of the sense of smell than of the so-called higher senses. The ordinary experiences of life and the regular work of the schoolroom necessarily give to the eye, ear, and hand considerable exercise, while the smell is called into use much less frequently out

of school and scarcely at all in school. Besides, the words expressive of smell percepts and concepts are far less numerous and exact than corresponding words for sight and hearing, so that the training incident to the use of language is likely to be far less extensive and accurate in the case of the nose than in that of the eye, ear, and hand. Add to this the low estimate generally placed upon the sense of smell, and the popular indifference to its training, as shown in the fact that while we have elaborate schemes for training the eye in knowledge of form and color, and practically none for training the nose in the performance of its proper functions, and we may well challenge for this useful member the sympathy and interest due to neglected merit and overlooked modesty. In every primary school there should be some special attention paid to the education of this sense.

This should aim to secure first the frequent exercise of the sense until it acquires strength proportionate to its duties. It should not be overworked, nor called into undue prominence, but should receive its due share of attention till it acquires both strength and sensitiveness. Second, the training should be such as to develop a high power of discrimination, so that the pupil can discern quickly and accurately the different odors that are presented.

Third, the growth in discriminative powers should be accompanied *pari passu* with language. Each distinct odor should be named and the closest association should be created between the idea and its name, so that the one shall recall the other. The pupils

should be exercised in analyzing complex odors so as to be able to detect the presence of different substances in the same compound. They should be instructed in noxious smells which indicate the presence of hurtful substances, and should have some knowledge of the disagreeable odors, their origin, and the method of their removal.

Boys might receive a little special training as a preparation for laboratory or scientific work, and girls in view of their possible duties as cooks or housekeepers.

A few very simple principles suffice for suggesting a plan for carrying this scheme into effect. At first the work should be simple, making very light demands upon the sense. A few common fruits, flowers, and spices or gums may be used with a view to forming a habit of sharp discrimination, quick recognition, and accurate naming. The drill exercises should be very brief, aiming at thoroughness rather than multiplicity, and may be alternated with lessons in form, color, place, number, etc.

For ordinary purposes it will be sufficient to make the child well acquainted with perhaps one hundred distinct odors, separate and in combination, and these for the most part should be of those things a knowledge of which will be of most service in daily life.

When the sense has been properly trained in childhood, and a habit of wise use established, the pupil will be able to call it into exercise on all needful occasions, and on the basis of this general culture can, if need be, secure a highly specialized development of the sense, meeting all the requirements of extraordinary occasions.

IV.

TRAINING THE IMAGINATION.

As a man thinketh in his heart, so is he.

THE BIBLE.

CERTAINLY the average child is bettered by the cultivation of the imagination.

JOSEPH LANDON.

To inquire into what God has made is the main function of the imagination.

GEORGE MAC DONALD.

To imagine in this high and true sense of the word is to realize the ideal, to make intelligible truth descend into the forms of sensible nature, to represent the invisible by the visible, the infinite by the finite.

FLEMING.

IV.

TRAINING THE IMAGINATION.

Imagination is the power to recombine and construct anew materials furnished by experience. — NOAH PORTER.

THAT power of the soul which we call imagination is much more comprehensive in its functions and usefulness than is usually recognized. Many neglect the faculty, others presume to despise it, and profess to think that the only training it calls for is curbing.

Properly speaking, the imagination is the soul's ability to form images or mental pictures of objects of thought. We could no more dispense with imagination than we could dispense with memory. Indeed memory itself is only a form of imagination: the process of remembering is the process of forming pictures of things once seen, or of recalling as objects of present thought past experiences. When I vividly recall a past scene, such as a battle, I picture it as present, and see again the fighting soldiers and hear the clash of arms.

It is by the use of this power that we are able to understand descriptions of objects, persons, or events that we have never seen. History is lifeless, uninteresting, and utterly incomprehensible except as we are able to form a lively mental picture of the scenes, places, and persons described in the narrative.

The works of the great poets and novelists are without meaning to him whose imagination is inactive. Thus a large body of the world's best literature is to him profitless.

The student of science, no less than the student of literature, is dependent upon the services of the imagination. The search for causes must be under its lead. By its help the geologist, the naturalist, and the astronomer see with the mind's eye the operation of forces active in bygone eras, and witness the vast panorama that has unrolled itself through the ages.

All art is the outgrowth of the imagination. The sculptor, before he has struck a blow with the chisel, sees in the shapeless block of marble, perfect in every lineament, the matchless form he would liberate. The cathedral stands complete from turret to foundation stone in the architect's mind before the workman begins his labor. The painter simply puts on canvas as best he may a rude copy of the picture already finished in his imagination. Imagination is the servant of the man of business no less than of the poet and of the artist. It plans the work of the farmer and of the blacksmith; arranges the details of the week's work for the thoughtful housewife, and directs all the labor of preparation for the grand entertainment; it disposes all the contemplated movements of the general on the field of battle before he has set a single squadron in the field. It is the presiding genius of the patent office, and the mother of inventions. It arranges the teachers' programmes and plans the schoolboys' sports.

It has a high office in the act of worship, when it summons before the mind of the worshiper an image of the object of his adoration. The sublime imagery of the book of Revelation is the product of this faculty.

By the aid of imagination rightly trained the soul climbs the loftiest mountain height of observation and aspiration. At its feet are crags and peaks of marvelous beauty; stretching away in the distance are valleys and plains, rivers and lakes, cities, villages, and the smoke ascending from many a happy home. The world seems spread out before it, and thoughts of boundless space, endless time, limitless beauty, and infinite power, wisdom, goodness, and love crowd upon it.

It is thus evident that the imagination plays a most important part in the soul's activities, as a servant in toil, a minister of pleasure, and an indispensable helper in the act of worship. To neglect this power is to neglect one of the soul's most regal endowments.

To train the imagination is to train the soul to form correct mental pictures, clear, vivid, rational, of things past or of things yet to be. It is to train it not only to seize with strong grasp upon the great essentials, the broad outline of scenes, events, characters, but to fill in when needed every detail, even the minutest. It is to awaken a quick discernment of fact, a profound love of truth, a keen sense of fitness, a ready passage from a whole to its parts, a cause to its effects, an event to all its accessories.

It is not possible to train the imagination separately from the other faculties. It does not stand alone, it does not operate alone. The imagination is the soul viewed as a picture-maker, an artist, a creator. Every act of imagination is inseparably connected with other mental processes and cannot proceed without them. To train the imagination is to train the soul in the performance of one of its highest functions.

Every rational method of education must needs train this faculty, for there can be no real progress in soul culture that is not attended by a culture of the imagination. The use of this is involved in that of all the other powers, observation, memory, thinking, and the proper training of these must issue in the culture of the handmaid of them all — the imagination.

Nevertheless it is possible to store the memory with words unaccompanied with correct ideas, and thus to attain a seeming culture which is spurious. Students may study geography and yet have no true conception of the countries, their natural features, productions, and people, which they talk about. They may study history with no realization that they are reading about men of like passions with us. They may read Milton with no expansion of soul, and recite Cicero without emotion.

Much of the work done in schoolrooms is profitless because no intelligent effort is made to awaken the imagination. It is worth while to consider the laws of the mind's activity as involved in the process

of imagination, with a view to such a cultivation of that faculty as will enable it to do its full work in the general culture of the soul.

By holding the imagination steadily before the mind as a distinct activity of the soul and one whose culture is greatly to be desired, the teacher will attain much better results than if it be left to take its chances of training in the general process of education. Culture progresses just in proportion as all the elements comprised in it are made, one by one, the conscious aim of the teacher's efforts.

The soul's power of picture-making is limited to the use of materials furnished primarily by the senses. The soul is not strictly a creative force: it simply imitates. The painter's finest picture is not entirely a new creation. The elements that enter into it he has gleaned from nature. The grouping, the arrangement, only is his.

The first step, therefore, in the cultivation of this faculty is in the training of the senses. The critical observation of nature is the indispensable prerequisite to the exercise of the imagination where use is to be made of natural objects. The more exact, varied, and familiar the pupil's acquaintance is with form, color, size, weight, birds, animals, trees, flowers, and the phenomena of nature, the more abounding will be his resources in after-life when he wishes to create for himself an ideal picture.

To insure accuracy of observation and an exercise of the imagination, the pupil should be led (1) to observe, (2) to describe objects present to the sense,

(3) to describe objects when removed, (4) to reproduce in his own language descriptions of objects described by the teacher, (5) to represent the object where practicable by pencil or crayon, or to reproduce it in clay, paper, or wood.

To be able to form a correct picture of a distant country as described in geography, he must be led to study attentively by observation the country, city, town, or village in which he lives. If he can first see and be led to describe in his own language the schoolhouse and its surroundings; then to listen to a description by the teacher, modifying his own when inaccurate; and afterwards read a description in the book verifying its correctness by observation, he will have laid the foundation for an extended knowledge of geography to be derived from the study of text-books, maps, and books of travel.

Next to actual observation is an acquaintance with pictures representing objects, persons, and places with which he is to be made acquainted through the imagination.

Preparation for the study of the history of strange people who lived in foreign lands and in distant ages must be made by acquainting him with the actions of the people among whom he lives. A knowledge of current events is the key to history.

In general it may be said that in order to insure the formation of correct mental pictures, the elements of every new science should be presented objectively if practicable. The beginnings of science should be learned in the laboratory, or in face-

to-face contact with nature. Globes, maps, pictures, blackboards, rightly used, are great helps to the imagination.

It should be remembered, however, that these helps may become hindrances. The great law of activity rules here as elsewhere in the development of mental power. In order to grow, the imagination must be used. Description of an object present must be followed by description of an object absent. Drawing from objects should give way to original designs. The reading lesson must be reproduced, and then must come original composition. A story of real travel prepares for a recital of an imaginary journey. The pupil must not depend upon objects, blackboards, pictures, after he is capable of dispensing with them. Excessive reading of stories told to excite the imagination may result in benumbing the faculty.

The imagination at its best estate is, in a sense, a creative power. When its activity is confined to mere receptivity, and there is no call for creative energy, the highest development is impossible.

Pictures may be used to excite the imagination, by calling upon the pupil to tell stories about them. When an interesting event is being read about or related, it can be arrested at a point of interest and he be led to imagine the conclusion. An outline of a story can be furnished, and he be required to supply the details.

In the process of training the imagination so that the mind can form accurate mental pictures, varied,

complex, numerous, with facility, the teacher must resort to experiments which serve as tests of the quality of the work done, and which serve also as valuable aids to the pupil in his work of construction. Among these may be named the following : —

1. Require a verbal description in the pupil's own language of the objects of his thought. All that is clearly conceived may be, should be, clearly described.

2. He may be asked to illustrate his thought by a diagram or drawing. Many of the problems in mathematics are insoluble because the pupil has no understanding of their meaning. This defect of the understanding, which is a fault often of the imagination, is revealed and sometimes removed by sending him to the blackboard to make a drawing or diagram which shall correctly set forth the conditions of the problem.

3. The accuracy of a verbal description of an object, person, or place, may be tested, not by an appeal to the the textbook for agreement in phraseology, which is of little or no value, but by comparison with the object described.

4. The details of an imaginary journey may be tested by reference to well-authenticated facts pertinent. Rivers are not found in deserts, and lions do not run at large in cities.

5. Appeal may be made to reason or judgment. Children often imagine things which are absurd. Of course it is of the essence of fairy stories to be absurd. They doubtless have a share, if not carried to excess, in arousing the faculty of imagination and

awakening a lively interest in common objects. Metaphors, parables, and allegories are useful as appeals to the imagination, but they must all conform to reason.

6. Pictures to be embodied in literature, painting, sculpture, etc., must be criticized by the accepted canons of their respective arts. A sermon must conform to the rules of homiletics. Nothing can take the place of searching, candid, kind criticism — criticism that appeals to general principles and descends to minute details of inaccuracy.

7. Too much stress cannot be laid upon the importance of keeping the mind of the pupil, so far as possible, free from everything that tends to pollute; it is quick to lay hold upon whatever is monstrous or unusual. Dime museums with their "freaks" do a great deal of mischief. But worse than these are the detailed descriptions of crime and revolting experiences that find their way into even reputable newspapers. The utmost pains should be taken to create in the mind a loathing of impurity in all its forms. So far as possible the child should be kept away from everything that will create or suggest an evil picture. "Nothing will do so much for the imagination as *being good.*"

8. Not less important is it to familiarize him with objects of beauty and scenes that are elevating and ennobling. A love of nature, a taste for pure art, an interest in good books, a fondness for the society of the cultivated, the refined, the pure, is a safeguard against low thoughts, unholy imaginations, and evil lives.

The imagination is that power that is especially concerned in the creation of ideals. Whatever of excellence in character, attainment in knowledge, worthiness in deed, beauty in surroundings the soul hopes for and strives after results from the activity of the imagination. Life is what the imagination makes it. We are ruled by our ideals. So far as the teacher is concerned the work of education practically culminates in the formation of an ideal in the pupil's mind, a picture of some good to the attainment of which life is to be consecrated. Should not that ideal be the highest possible?

V.

TRAINING TO THINK.

IT may startle you to learn that the highest function of the mind is nothing higher than comparison.

SIR WILLIAM HAMILTON.

DID the Almighty, holding in his right hand Truth and in his left Search after Truth, deign to tender me the one I might prefer, in all humility, but without hesitation, I should request Search after Truth.

G. E. LESSING.

BY thinking we rise to the unseen from that which is seen, to the laws of nature from the facts of nature, to the laws of spirit from the phenomena of spirit, and to God from the universe of matter and of spirit, whose powers reveal his energy, and whose ends and adaptations manifest his thoughts and character.

NOAH PORTER.

THE training of the powers of judgment and reasoning should be commenced by the mother and the elementary teacher in connection with the acquisition of common everyday knowledge about things.

JAMES SULLY.

V.

TRAINING TO THINK.

That we think is far too little considered or cared for at present.
— DR. JOHN BROWN.

ONE great function of a rational being is to think. The universe of matter and of spirit is an exposition of God's thought. Chaos became cosmos when matter arranged itself in order according to the divine plan. Man's high prerogative is to think over again God's thoughts as objectified in the universe, while science, philosophy, and theology are man's attempt at the restatement of God's thought. All rational action is preceded and conditioned by thought. Among the highest pleasures of life are the pleasures of thinking.

The difference among men as independent forces in life is often only a difference in thought-power. The ability to collate facts, analyze, compare, and classify them; to study them in their relations, to search for causes and foresee results, so as to form independent judgments, gives to its possessor influence and authority among his fellows.

A knowledge of facts has its value. The ability to understand what others have thought about facts has a greater value; the ability to form one's own philosophy of facts has the highest value.

Power to think is helpful in all the spheres of life. Even a slave is a better servant if he can think. There are no walks of life so humble that this power does not alleviate sorrows, gain advantages, win privileges, and bring blessings. Many of life's emergencies can be met successfully only by the power of independent thinking.

In a republic of freemen where the great problems of social, economic, and political life are left to be solved by the independent voter, it is of the highest moment that the pupils in our public schools, the millions who in a few years are to be entrusted with the weightiest responsibilities, should be trained to think.

That the average pupil in our common schools does not acquire the great art of sound thinking is evident to all who are acquainted with the practical workings of our system. Any mode of instruction which unduly exalts the memory, instead of calling into healthful exercise the thinking faculties, is fatally defective. Children learn to think by thinking. Memorizing is not thinking; observing experiments performed by the instructor is not thinking; construing Latin does not necessarily imply thinking.

Thinking is a complex process and involves the bringing of a subject into all possible relations with the mind. In its highest form it calls for the loftiest endowments, the greatest mental energy, and the most persistent effort. Great thinkers are few. Those who are competent to make any considerable

addition to the advance of human thought in any direction are rare.

Nevertheless thinking may be analyzed into a few simple processes, and every well-endowed child may be so trained in the exercise of these various processes as to become in a high degree an original and independent thinker. The chief processes involved in thinking are the following, namely: —

1. Analysis. The first manifestation of this power is in discriminating one object or sensation from another. To analyze is to separate into parts, to resolve into elements, to contemplate the qualities of an object one by one. The mind can analyze complex qualities of concrete objects by either of the senses. The eye separates colors; the ear, sounds; the taste, flavors; and the smell, odors. Acuteness of analytic power comes of intelligent practice. It is said that the trained eye can distinguish forty thousand distinct colors.

Elementary analysis and the simpler forms of logical division come within the range of little children, and may be taught in the kindergarten; the subtler processes of analysis may be reserved for advanced students.

The plan of requiring students in the grammar and high schools to make out topical analyses of lessons studied and to prepare a careful outline of subjects before writing essays on them is highly beneficial.

2. The second element in thinking is abstraction, contemplating a single quality apart from all others

or apart from the object in which it inheres. The chief requisite for this is fixedness of attention. Intelligent counting is a process of abstraction, and mathematics lends itself readily as an instrument of discipline for developing this power.

3. Comparison forms so essential a part of thinking that Sir William Hamilton makes it synonymous with the entire elaborative process. It is difficult to overstate the importance of the power of bringing objects into such relations to each other as to bring to light their resemblances and differences. Simple exercises in the act of comparison should constitute a large part of the child's activities. It is only by such exercise that he can be led to have clear, well-defined ideas of color, form, size, weight, taste, smell, etc.

A cardinal defect in most men's thinking is that they have no well-established standards of comparison. Knowledge of extension can be had only by reference to some familiar standard of linear measure, such as the foot, yard, rod, or mile. Weight must be conceived of as a multiple of an accepted standard, as the pound. Ideas of color must be referred to the primary elements of color. When a child knows these absolutely and can detect them in all their modifications, he knows color.

The foundations of clear thinking must be laid in familiarity with the primary standards of color, form size, weight, direction, hardness, taste, odor. Clear thinking is conditioned on close comparison. Comparison always implies definite ideas of something

fixed and unchangeable. The goal of science is the determination of these fixed standards. They are to the thinker what meridian lines are to the geographer. The pupil needs to have extended drill in handling and contemplating standards of weight, measure, time, money, etc. When he has been made familiar with these, and has facility in using them as means of comparison in thinking, he is well on in the high-road of culture. Until he knows by experience, with wellnigh absolute certainty, the meaning of the terms expressive of the elementary ideas which enter into thinking, he can make no progress in true thought. The test of thinking is truth, correspondence to fact, agreement with reality.

4. Judgment is but a completion of the act of comparison; in an act of simple judgment the mind declares agreement or disagreement between two notions or objects brought into comparison.

The mind is susceptible of a high degree of training in judgment as well as in comparison. The two chief qualities to be sought after are accuracy and quickness.

By a graduated series of exercises the pupil may be led along from such a simple judgment as that "the apple is red," to that of a far-reaching generalization resting upon a careful induction from a multitude of considerations. Such a judgment would be this, for example: "The universe is a work of design."

The habit of forming moral judgments should be early established. A mind eager for the truth, painstaking in research, sensitive to fact and keenly

alive to the force of evidence, quick to decide, but always ready to modify opinions to accord with new facts, will be positive, aggressive, and yet humble and charitable.

5. One of the most useful elements of thinking is that of classifying, grouping objects into classes by reference to their points of resemblance. By the power of thinking of objects in vast groups or classes the mind is capable of an intelligent survey of the universe; without this power it would be oppressed with the limitless number of objects claiming its attention.

The habit of grouping into classes the blocks, beads, splints, and other objects which the child uses in the kindergarten may be utilized a little later in simple exercises in classification in natural history, botany, zoölogy, and thus become for the child the initial step into the higher realms of thought where he contemplates nations, institutions, processes, forces, worlds, under wide-reaching laws.

6. Closely connected with classification is the process of induction and generalization. The great achievements of modern science are largely due to the employment of these two processes of thinking. Practical life owes its successes chiefly to the skill shown in examining particular instances and from them reaching a general principle. Children should early be trained in making correct inferences and wise generalizations.

This incomplete survey of the thinking process is sufficient to show the feasibility of doing much, even

in the earlier stages of instruction, to train children to correct habits of thinking. The child's first lesson in observation should awaken the powers of thought; the first steps in reading should be accompanied by thinking; number should be taught by leading him to think; the whole course of reading should be a drill in thinking: selections should be analyzed, paraphrased, summarized, and commented on until he is master of the thought. The study of geography should be an exercise in comparison; history a training of the judgment; translation should be much more a thought exercise than is often the case. The study of the natural sciences should be carried on in the laboratory by experimental processes and not with the book only.

Original composition, begun in the first year of school life, should form a large part of the daily exercises through the whole course of study, from the kindergarten to the university.

With this idea kept prominently in mind the following modifications in school work are suggested: —

1. A recognition of its rightful place in the public school system of the kindergarten, in which the little child is brought into immediate relationship with thought-provoking, natural objects, and is trained to use his own powers of observation, thought, and expression.

2. The introduction into the primary grades of a greater amount of oral instruction, in which the teacher shall aim to awaken and direct thought rather than to impart knowledge.

3. Increased attention to the cultivation of language as the instrument of thought.

4. A stronger emphasis of the value in all primary and secondary instruction of the study of nature, plants, animals, minerals, rocks, physical phenomena, and facts pertaining to society, government, etc.

This will necessitate the wider use of the laboratory for observation and experiments in chemistry, physiology, and physics.

5. An extension of drawing, molding, and designing as a means of awakening and expressing thought.

Whatever place in our public schools may be temporarily awarded to industrial training, it is probable that eventually it will survive only so far as it justifies its right to exist as a culture study; that is, as a means of developing the power to think. Here and there trade schools may exist, but they will stand apart from the public schools, or will supplement the work of training done in them, by giving to their pupils a special drill in the line of the application of their energy to special ends.[1]

6. A large increase in the line of apparatus and books of reference as aids to independent research.

7. Such a reduction of the number of pupils assigned to each teacher as will afford time and strength for individual instruction.

8. A great reformation in the character of examinations so that they shall cease to be so largely a probing of the memory in quest of facts, and become rather tests of thought-power.

[1] See report appended to this chapter.

9. This will necessitate a higher order of professional preparation for the work of teaching. Teaching will be studied as a science, and pedagogy as a philosophy. The teacher's ability to think with vigor, depth, and breadth, and to awaken thought-power in the young, rather than his scholastic knowledge, will be the measure of his qualification for the high office of molding the character and shaping the destiny of the children entrusted to him.

10. Finally, in the distant future it may lead possibly to the intelligent supervision of schools by experts who know the value of a high order of culture and feel keenly the responsibility of securing for the children of the public schools all the rich results that ought to flow from them.

INDUSTRIAL TRAINING.

At the meeting of the National Educational Association in Chicago, July, 1887, the following report was submitted: —

The exhibit of students' work from the State University at Champaign, Illinois, showed clearly both their method and results. It comprised mechanical drawing in its various stages, and construction in both wood and metal.

There were three very noteworthy features. First, it was quite evident that the work was directed by a rigid method. It was the work of the hand, but of the hand guided by the mind. Thought preceded action. The brain led, the hand followed. There was an order of succession, a progress from lower to

higher. There was a reason for everything. It was an embodiment, in lines and material, of ideas. This training culminates in the solution of difficult problems by the invention of curious machinery for the accomplishment of some worthy end.

Students thus trained do not become mere copyists, blindly following the pattern, but intelligent workmen, competent to execute, to plan, and to direct.

Another feature was the character of the work itself. It was well done. Even that performed by beginners showed signs of care, accuracy, finish. The use of tools may be as pernicious in developing slovenly habits, inaccuracy, carelessness, — precursors of failure, — as the most vicious system of rote learning. It was apparent that the students whose work was on exhibition had a lively industrial conscience as well as a busy brain and skilled hands. It seemed to be a maxim with them that what is worth doing is worth doing well. Not variety but finish, not quantity but quality. Workmanship, excellence, was stamped on everything.

And this leads me to note the third characteristic feature of the work — its honest simplicity. Nothing seemed to be done for show; even the ornamental work stood for just what it was. There were no flourishes, no trickery, no pretense. Everything bore the marks of a fine moral purpose to do thorough work. One could not help feeling that such a training would give us honest and efficient workmen, who, as architects, would not repeat the abominations of many modern buildings that try to call attention from

their ugliness by high-sounding names, and bridge-builders whose work would stand the test of hard usage.

Altogether the exhibit was most excellent, and justified the wisdom of maintaining such institutions as the industrial university.

Respectfully submitted.

[Signed] T. J. MORGAN.

VI.

TRAINING THE SENSIBILITIES.

I WOULD have my children able at each moment from morning to evening to read on my face and to divine upon my lips that my heart is devoted to them; that their happiness and their joys are my happiness and my joys.

PESTALOZZI.

I CALL education the virtue which is shown by children when the feelings of joy or of sorrow, of love or of hate, which arise in their souls, are made comformable to order.

PLATO.

INFLAMED with a study of learning and the admiration of virtue; stirred up with high hopes of living to be brave men and worthy patriots, dear to God and famous to all ages.

JOHN MILTON.

THE love of the beautiful is a part of human nature, and one of the evidences of its dignity. It should therefore be educated for its own sake, as elevating that nature and increasing its means of happiness.

JAMES CURRIE.

VI.

TRAINING THE SENSIBILITIES.

The heart has as good a right as the mind to a special training.
— COMPAYRÉ.

IN company with a group of travelers I once visited the famous old church at Freiburg to listen to the great organ which gives it its fame. The organist took his seat before the dumb instrument, and passed his hands lightly over the else silent keys. At his touch they responded, now sweet as the notes of a bird, now soft as human voices, and now loud and jarring as the noise of a thunder-storm. It was an hour never to be forgotten, as it revealed to me possibilities slumbering in the organ of which till then I had no conception. The work of the teacher is not unlike that of the skilled organist. He is to awaken in the heart of the child emotions and feelings ranging from the tenderest pity for helplessness to the most august reverence for the Creator of the universe.

Not infrequently the teacher's work is conceived of as that of merely imparting instruction, or at most of training the intellect. But this is a one-sided and narrow view of his office. He has to do with the sensibility no less than with the intellect. He is to awaken feeling as well as to impart instruction.

The soul is a unit. It cannot be separated into parts, as can the body. Its three great functions, knowing, feeling, and willing, are inter-related and mutually dependent. Knowledge awakens desire, and desire influences the will. There can be no act of knowing or of feeling which is not also an act of willing. Training to think must affect to some degree the capacity for feeling as well as influence the will. It is impossible to reach the sensibility except through the intellect. We do not desire that which we know nothing about.

Nevertheless, there is a broad line of distinction between the sensibility and the intellect, on the one hand, and the will, on the other. The consciousness of knowing is one thing, that of feeling pleasure or pain is quite another. The two states are wholly unlike. Not less dissimilar are an act of willing and an act of feeling or of knowing.

These three great elements of being may exist in different individuals in very unequal proportions. In some they are very evenly balanced, in others the propensity for knowledge predominates over both sentiment and action; in some the feelings are uppermost, while in others the will is the dominant factor.

The ideal of human culture is that condition in which the intellect, sensibility, and will are each well developed, and all stand in harmonious relationship. To know broadly and accurately, to feel quickly and keenly, and to act with promptness and effectively are the prerogatives of the well-cultured man.

While increasing attention is paid by intelligent teachers to the systematic training of the intellectual powers, the senses, memory, imagination, thinking, reasoning, very little attention is given to the proper cultivation of the sensibility, the appetites, desires, sentiments, emotions. This is largely not only a neglected field, but even an unknown territory. The attention of the student of psychology in the normal school is directed rather to the faculties of knowledge than to the capacities for feeling. The laws of memory are much more clearly known than are the laws of the desires. In elaborate treatises on psychology it is far more difficult to find a satisfactory discussion of the feelings than of the intellect. I know of no books of methods for training the feelings at all comparable with those for training the senses. The "model lessons" given in training schools are models of instruction, and seek to illustrate the best way of stimulating the intellect, and seldom refer to the culture of the feelings. Even books of model lessons on morals are apt to be devoted to an exposition of teaching moral truth rather than to the mode of awakening right sentiments. Candidates for the position of teacher are questioned as to their knowledge, methods of instruction, and modes of discipline, but not on their manner of calling into proper exercise the child's wonderful endowments for feeling pain at sight of falsehood, deformity, and evil, and pleasure at exhibitions of the true, the beautiful, and the good.

That the training of the sensibilities should claim the serious attention of the educator will be made evident by the following considerations:—

1. The capacity for feeling is one of the greatest factors in the constitution of the human soul. It is not practicable in a brief sketch like this to do more than outline the feelings, without attempting a detailed description. For convenience, the various feelings will be grouped, and the most important ones named.

(*a*) The appetites. The lowest group comprises those cravings that are most closely connected with the welfare of the body, such as hunger, thirst, suffocation, ennui, weariness, etc. These are animal, and man shares them with the brutes.

(*b*) The desires. This group embraces the desires of life, property, society, approbation, liberty, power, truth, and others. This class loses its physical character and becomes more distinctively psychical.

(*c*) The affections. In this are found love for self, for parents, for children, conjugal and fraternal affection; friendship, patriotism, philanthropy, gratitude, benevolence, pity, and piety, or love of God. This group is marked by a moral element which is absent from the others named.

(*d*) The æsthetic emotions of beauty, grandeur, sublimity constitute another group.

(*e*) A fifth is made up of the moral feelings of obligation, a sense of duty, remorse, shame, and self-approbation.

(*f*) Into a sixth may be gathered the religious

emotions, patience, faith, hope, repentance, reverence, and adoration.

(*g*) We may bring together into a separate class what may be called the passions, avarice, ambition, envy, jealousy, hatred, anger, revenge, pride, vanity, and others.

This list, though by no means exhaustive, is suggestive of the large place in the human soul which is occupied by the feelings. They form an integral part of our constitution and claim no less consideration than does the intellect. To ignore the feelings is to ignore the soul itself in the realm of its greatest activities.

2. If a contemplation of the soul's varied capacity for feeling, embracing so wide a range of possibility of pain and pleasure, does not establish its claim to be considered by the educator in any comprehensive scheme of symmetrical culture, consider the part it plays in the life of the soul. Without endorsing the epicurean notion that pleasure is life's end and aim, it must be admitted that the practical test that most men apply in estimating the value of any experience is the aggregate of happiness or pleasurable feeling enjoyed.

3. The brain is the servant of the heart. Men think in order that they may feel. They accumulate knowledge chiefly for the sake of the emotions it awakens.

4. The feelings are a truer index of the soul than is the intellect. "As a man thinketh in his heart so is he." What a man feels, rather than what he

knows, is a criterion of his worth. In the realm of feeling lies his true greatness. The marvelous nature of his soul is shown by its capacity for countless varieties of feeling and infinite combinations of emotion. He is capable of an ambition that covets the world and of a self-abnegation that courts a martyr's death. He listens with delight to the sweet notes of a bird and rejoices in the midst of a mighty storm at sea. He spares a spider for pity and depopulates a city for revenge. The most conflicting emotions often contend for the mastery within his breast. The supreme command laid by the Saviour upon men is to love God supremely and their neighbors as themselves.

5. The importance of the feelings is still further shown by the fact that action springs out of feeling. The will is largely dependent upon motive. We usually act as we feel. The will is little more than the heart's executor. If one would know how a man will act, let him learn how he feels. The great achievements of men are traceable to their desires. Ambition prompted Alexander to conquer the world; love of adventure sent Magellan round the globe; love of gold peopled California; patriotism gave the world a Washington, and philanthropy a Lincoln.

6. Feeling issues in action, actions become habit, and habits crystallize into character. The formation of a good character, therefore, is largely dependent upon the right unfolding of feeling.

7. It is especially noteworthy that in human

conduct the evil passions, hatred, revenge, ambition, avarice, jealousy, and the like, play a great part. Vice and crime stain human annals and sicken the student of history. The unwelcome truth is often forced upon us that vice is triumphant and that evil predominates.

Along with this is the other sad fact that with multitudes of human beings life is rather a series of sorrowful experiences than a succession of pleasures. So awful is the amount of human suffering that some serious-minded men have earnestly contended that "life is not worth the living."

The human heart may be compared to a fertile field, capable of producing fruits in great profusion and flowers in endless variety. Under proper care it yields all that can be desired for comfort and pleasure. But if neglected, the weeds root out the flowers, the tares supplant the wheat, the garden becomes a desert, and the field a wilderness. The heart of man, which is capable of exercising the noblest desires, the tenderest affections, the finest sentiments, and the sublimest emotions, is likewise capable of being ruled by the most depraved appetites, brutish passions, and fiendish emotions.

Enough has been said to suggest the unspeakable importance of right feelings to the individual and to society. Language is inadequate to portray its full significance. Nothing more than our susceptibility of suffering and our capacity for enjoyment shows how "fearfully and wonderfully we are made." Only the conscious revelations of eternity can fully

unfold to us the awful depths of suffering into which a soul may descend or the unimagined heights of joy to which it may soar. The murderer on the scaffold awaiting the fatal word, and the seraphic evangelist depicting the glories of "Jerusalem the golden," are types of the extremes of which man is capable.

The question may here arise, What has the teacher to do with all this? The answer is at hand. In each child lie all the possibilities of pain and pleasure. The sensibility is an integral part of the human soul. The chords of the heart are all there, waiting to be swept by the masterhand. They can give out the harshest discords and they can pour forth the harmonious strains of the sublimest oratorios. The original endowments of capacity for feeling are all present in childhood, simply waiting to be called into exercise. As the child grows, it gains no new capacities for feeling, it simply experiences the use of its original endowments

Very young children manifest a great variety of feelings: curiosity, love of society, desire of liberty, desire of property, love of approbation, affection, hope, fear, together with envy, jealousy, hatred, and many others. In the schoolroom, where a large number of children mingle freely together, the feelings are likely to have a rapid development.

It is in childhood that the greatest spontaneity and artlessness are exhibited in the manifestation of emotion. Men learn to conceal or counterfeit their feelings, children seldom do either. They carry

their hearts upon their sleeves. By word and gesture, tones of voice, and facial expression, they reveal the real nature of their inward promptings. As light and shade chase each other in unrestricted freedom over the landscape, so the swift waves of varying emotions follow each other in quick succession over the child's face.

The intimate association of children of widely diversified dispositions in all the varied employments of the school affords an exceptionally favorable opportunity for calling into healthful activity almost all the emotions suitable to childhood.

Under skilful training right feelings can be evoked and evil feelings checked. Wise discipline awakens love of order, desire of knowledge, self-reliance, trust, love of the beautiful, love of truth, and a sense of obligation to duty, together with scorn of meanness, hatred of deceit, shame, and remorse. On the other hand, flattery may awaken conceit, too much attention develops vanity, too rigid discipline arouses resentment and deceit, lax discipline brings out recklessness and disregard for authority.

The teacher unconsciously arouses, directs, or depresses feelings. The manifestation of feeling is a potent agent for arousing the same, since feeling is contagious. The teacher's tone of voice, manner of speech, methods of instruction, and mode of discipline are all forceful in awakening or lulling emotion.

The feelings of children when once fully awak-

ened tend to persist and to grow. That which to-day seems only a harmless ripple on the surface of the young child's soul, by-and-by appears as a deep and dangerous current, drawing into its impetuous rush all his energies and carrying him on to destruction. An approving and sympathetic smile from the teacher may awaken in the mind of the young child aspirations and hopes which are only the precursors of great attainments. Many an eminent career in science, literature, art, or business, is traceable to some childish emotion fostered by a sympathetic parent or teacher. And it is doubtless also true that many an otherwise brilliant career has been prevented by a lack of kindly sympathy when sympathy and encouragement were most needed. The child-heart is very susceptible to outward influences, and feelings are easily aroused and directed which may become dominant forces in unfolding character and fixing destiny.

It is a consideration of great weight that there are opportune moments for awakening, deepening, modifying, or directing feeling, when much can be done. At such times the soul is plastic in the hands of its guide and readily yields to wise direction. These golden moments come intermingled with the child's work and play, often without any effort on the part of the teacher to prepare them, while at other times they come as the direct result of the teacher's plans and efforts. Happy is he who can seize such occasions and use them wisely for training to healthful activity the feelings that tend toward duty, virtue,

and happiness. These opportunities unimproved may never return. The iron must be welded while it is hot, the clay be molded while yet plastic on the potter's wheel, else the clay grows brittle, the iron hardens, and the coveted results can never be attained. If a desire for knowledge is not awakened in childhood, it is not likely to be in manhood. If a child acquires a dislike for study, it is difficult to overcome that dislike in later life. Love of the beautiful in all its varied forms is denied to those in whose hearts it has not been awakened in youth. Unless the feeling is aroused in connection with simple object-lessons, and lessons in color, form, music, manners, and morals peculiarly adapted to the child's capacities and experiences, and thus grows with his growth and intertwines itself with all that he sees, hears, reads, thinks, and does, running like a golden thread through all life's woof and warp, it can never come. Thought and feeling should grow together. Each new acquisition in knowledge should awaken its appropriate emotion and each new desire give rise to new attainments in knowledge. The growth of feeling is not something that can be neglected with impunity or postponed at pleasure. It should proceed *pari passu* with the unfolding of the intellect. Thoughts and emotions should be blended in all the stages of their development, so that thought may have its flowering in sentiment, and sentiment have its firm basis in knowledge.

The tendency of school life is toward a dry, hard

intellectualism. The goal of endeavor is knowledge. The reasons for this are evident. Limiting the teacher's work chiefly to instruction renders it comparatively simple; it brings results within the range of tests: and where these results are looked for principally in feats of memory, they can be reduced to percentages and tabulated. But where it is required that the teacher's work shall include the culture of the feelings, it becomes more complex and difficult, less subject to rules and routine and impossible of mathematical measurement. There is as much difference between the crude process of education that results in cramming the memory with facts and dates which can be called up at pleasure, and those subtler processes that awaken the finer feelings of the human soul that ennoble and beautify the whole nature, as there is between the coal that is weighed out by the ton and consumed in the furnace and the diamond that flashes back the sunlight from the brow of royalty. We do not despise the coal, but we look also for diamonds. Education must supply the child with facts and train his intellect, but it should not stop here. It is capable of far higher results, and should aim at nothing less than the highest. Education that stops with mere intellectuality comes far short of its true aim.

It may be asked whether a child may not be too much under the domination of sentiment; whether it is not possible to excite feeling too early or too violently; whether special effort is not required to

stimulate the intellectual powers, and whether feeling should not ordinarily lead to action? To these questions a general answer may be returned: Yes. What is here insisted upon is that the teacher should study each child and seek, so far as possible, to train its powers symmetrically, giving to intellect, sensibility, and will, each its due proportion of care, and seeking to educate the whole nature, training the child to think, to feel, and to act. To train the intellect should not be the sole aim of the teacher, as seems so often to be the case. Where a child has an excess of feeling it is the business of the teacher to repress it or to counterbalance it by awakening some opposite feeling. Fear is to be replaced by love, timidity by self-confidence, love of play by love of study, superstition by reverence.

There is a very general notion that the intellect is subject to well-ascertained laws, but that the feelings are capricious and subject to no law. This is a hurtful mistake. Feelings are subject to law no less than memory and imagination. There are laws of feeling as well as laws of thought. We may teach children how to feel as well as how to think. One great psychic law dominates our whole spiritual nature. Each power grows by appropriate exercise. Capacity for feeling, as well as power to think and ability to act, is augmented by its own activity. Another well-established law peculiar to sensibility is that feeling is contagious. Love begets love; a teacher's enthusiasm for study enkindles a whole school; disrespect for authority,

embodied in some strong, rude boy, has a demoralizing effect upon the entire body of his associates, unless, perchance, his conduct is so outrageous as to produce a reaction in favor of good order. There are other laws, easily ascertainable and readily available, for the proper cultivation of the sensibilities.

How shall this great work be accomplished? It is only possible here to suggest in bare outline a method.

First of all, the teacher must be one whose feelings are sensitive, strong, and in healthful equipoise. A man without a heart has no business to be a schoolmaster.

In the next place, those who are in course of preparation for teaching should make a careful study of the emotional nature, with a view of becoming master of the secrets of the human heart. Of what feelings is the human soul capable? How are they aroused? What feelings are peculiar to childhood? What is the function of each feeling? When do feelings cease to be virtuous and become vicious? How can they be cultivated? How do feelings manifest themselves? These and similar inquiries should be pursued by the study of books, by introspection, and the patient and careful study of children, until the student has attained a familiarity with this most important element of man's nature and has acquired a deep and lasting interest in the study.

Third: The training of the sensibilities should be recognized as a distinct and important part of the teacher's work. Special fitness and preparation for doing it should be required in those who aspire to

teach, and success in this work should be one of the criteria by which a teacher's work is to be judged.

Fourth: In the arrangement of programmes for institutes and other educational meetings more prominence should be given to the discussion of specific questions pertaining to the culture of the feelings.

Fifth: This subject demands a more thorough discussion than has yet been given to it in works on pedagogy.

Sixth: In the location of school buildings, in the adornment of the grounds, and in the furnishing of the rooms with pictures, cabinets, plants, and other articles of interest to children, increased attention should be paid to the development of the æsthetic nature. Imposing architecture, delicious music, landscape gardening, fine examples of painting, engraving, sculpture, and statuary are all suitable accessories of a school of learning.

Seventh: In arranging courses of study, color, form, music, drawing, and other subjects that appeal strongly to the sensibility should find a larger place. One of the delightful and humane features of the kindergarten is the liberal provision it makes for training the sensibility by systematic lessons, adapted to the child-nature.

Eighth: The whole course of discipline, the daily programme, the administration of justice should be such as to awaken a love of order, neatness, promptness, politeness, honesty, and fidelity.

Ninth: The method of instruction should be such as to specially call into exercise the power of feel-

ing. Mere memorizing of set tasks has little efficacy in this regard. Constant effort should be made to lead the child to use its own powers of observation and to state in its own language what it thinks and feels in reference to what it observes. The use of objects, microscopes, pictures, vivid narratives, and good literature each has a place in any scheme of instruction designed to reach the heart. Short talks in regard to current events, comments on the passing phenomena of the seasons, improvement of the incidents of school life may be wisely employed. Occasions presented by lessons in reading, geography, history, physiology, astronomy, and other studies, should be utilized in arousing and directing feeling.

Tenth: The school should be pervaded by a high moral and, if possible, religious tone. There should be awakened a keen sense of honor, an exalted notion of duty, an unswerving adherence to principle, an unconquerable aversion to falsehood, a reverence for authority, penitence for wrong, and an honest, simple fear of God as maker, observer, and judge.

This conception of the teacher's work, while adding to its difficulty, adds also greatly to its dignity. To train the sensibility so that it shall respond to all the varied influences that affect it in such manner as to multiply its sources of happiness and prompt it to right courses of action, is an exalted privilege that may well satisfy the loftiest ambition of one who seeks to promote the welfare of his fellow-beings, purify the family, ennoble the race, and glorify the Maker of us all.

VII.

TRAINING IN LANGUAGE

HAD thought been all, sweet speech had been denied.

EDWARD YOUNG.

THE dictionary should be the almost constant companion of the pupils in our grammar and high schools.

JOHN B. PEASLEE.

IT may, without hesitation, be affirmed that grammar is not the stepping-stone, but the finishing instrument.

C. MARCEL.

WHATEVER foreign languages a young man meddles with (and the more he knows the better), that which he should critically study and labor to get a facility, clearness, and elegancy to express himself in should be his own, and to this purpose he should be daily exercised in it.

JOHN LOCKE.

VII.

TRAINING IN LANGUAGE.

Syllables govern the world. — JOHN SELDEN.

THERE are few accomplishments more to be desired than to be master of one's own language. Social intercourse is largely conditioned on the ability to express one's thoughts in choice phraseology. There can be no satisfactory interchange of ideas, no stimulating contact of mind with mind, without accurate, forcible speech.

Even the power to think is limited by the ability to clothe thought in fitting language. When the mind reaches its boundary of expression it finds its limit of thinking. Thought and language are united as soul and body. Thought is the vivifying spirit which clothes itself with appropriate expression. Each new idea demands its suitable word and each thought its sentence. No language — no thought.

Business intercourse of necessity makes use of language, oral and written, as its medium, and is facilitated by skill and hindered by a lack of skill in the use of intelligible expression. Much valuable time is lost, many misunderstandings arise, and business intercourse is trying to the patience and temper of men, by ignorance of correct modes of communicating one's ideas and wishes.

Progress in human thought, in poetry, science, or philosophy, is only possible where there is a corresponding progress in the power of expression. The growth of the dictionary is one index of the progress of a race. The study of language as a vehicle of thought with a view to its employment is a stimulus to vigorous thinking; the grammar and dictionary are weapons of conquest.

One of the most unsatisfactory results of our school work to-day is the meagre attainment of the pupils in language. Boys and girls spend months and years in our public schools, and when they leave spell incorrectly, speak inaccurately, and write with great difficulty. The results reached are by no means always commensurate with the time spent and the labor bestowed.

This is due in large part to faulty methods of instruction. It is possible in the time which the average graduate of the high school spends in study to acquire a very enviable mastery of both oral and written language. This is not a matter of theory but of observation. It is the object of this paper to set forth in brief outline what may be done for pupils in this important work.

1. Beginning with the primary grade, when the child first enters school he should be encouraged to talk freely, expressing his thoughts on such things as have come under his observation at home, at school, or on his journeys back and forth. He will "think as a child and speak as a child," but his thoughts will be his own, and under the guidance of

his teacher he will make rapid progress in ability to express them in fitting speech.

2. A series of simple object-lessons on common things, arranged with a view to directing attention to parts, qualities, uses, etc., will awaken new ideas and give occasion for new words. Thus daily addition may be made to his vocabulary.

3. The first reading lessons should be, not from book or chart, but from blackboard. The lesson should be the outgrowth of a familiar conversation about some interesting object. At first sentences made by the teacher, short, simple, and expressive of what the child understands and has interest in, may be spoken, then written upon the board, and afterward read by the child. Afterwards he may be led to talk, and his sentences may be copied and read.

4. Lessons in form and color should be lessons in language also. For every new idea which is awakened in the mind the teacher should suggest at once the proper word, and the child should use no word that does not immediately suggest to his mind its appropriate idea.

5. Number lessons should be primarily lessons in observation and language. First the idea, then the name; first the thought, then the expression. Processes before rules; principles before formulas. Every operation should be accompanied by a statement in the child's own language of what is done and why. Explanations, not formal and stereotyped, but clear and concise, should accompany the work at every stage.

6. In the second year the child may be led to observe an object, such as a cat, dog, bird, and to give an orderly description of it, together with a brief account of its habits, and to relate simple stories from observation, reading, or hearsay. These oral descriptions by-and-by give way to written ones, which from year to year grow in completeness and perfection of detail.

7. The early exercises in composition, on the blackboard, may be made to teach the proper use of capital letters, the punctuation marks, the structure of the sentence and of the paragraph, and some of the simpler qualities of style.

8. The spelling lesson is an invaluable means of language training. The child may be led to think of groups of words, names of familiar objects, of actions, of birds, animals, etc. Each new word should be properly pronounced, neatly written, correctly spelled; should be defined by the child in his own language, and then be rightly used in a sentence.

9. A very delightful entertainment for children may be had by leading them to write accounts of imaginary journeys, into which they weave the information gathered from the geography lesson, supplemented by what is gained from books of travel, newspapers, home instruction, and, whenever possible, personal experience. Geography furnishes exhaustless materials for language exercises. The exercises in turn fix the facts in the memory and turn them to good use as food for thought.

10. The reading lessons at every stage of the pupil's progress should be made, in the best sense, lessons in language. This may be done by leading him to give a statement in his own words of the thought of the sentence or paragraph read; by requiring a summary of the principal thoughts of the selection; by practice in paraphrasing; by turning poetry into prose; by making a topical analysis of the selection read; by expressing his own thoughts awakened by the reading; by being led to compare the styles of the different authors read. The reading lesson, often barren of interest to him and utterly profitless, may be made to stimulate thought and to improve greatly the power of expression.

The frequent reading of choice specimens of good English, and especially the committing of them to memory, accompanied with clear comprehension of both thought and style, has a powerful influence in shaping thoughts, arousing lofty and ennobling feelings, and in giving him a style fluent, forceful, and elegant. Perhaps nothing exerts a more profound influence upon his command of language than the books he reads. Accustomed to read attentively and widely books suitable to his age, and to talk of what he reads, he imbibes the spirit of the author, thinks his thoughts, is stirred with his motives, and almost of necessity models his style after that of his favorite authors.

11. Instruction and drill in the writing of letters of business and friendship, notes, invitations, bills, receipts, telegrams, etc., is a profitable exercise for children of say ten years of age.

12. Technical grammar, once a fetich, then a pariah, is now returning to its rightful place as an invaluable servant in the work of education. Even the language lessons which have supplanted parsing in the lower grades have been obliged to borrow from the science of grammar many of its facts and principles.

The cultivated man needs to know not simply the facts of his mother tongue, but the philosophy as well. The English language, although not highly inflected, has nevertheless a philosophy of its own. Some account of the history of the language, the elements that enter into it, changes in inflection, variations in meaning, etc., awakens in young minds a lively interest, and leads to a more critical observation and to the improvement of their own speech.

13. Practical drill in the use of the dictionary, and a careful study of synonyms until the habit is formed of choosing the appropriate word for each idea, is, when it does not degenerate into puerile subtleties, invaluable in enriching the speech.

14. The history lesson affords a special opportunity for language drill by leading to an analysis of events into their elements, the tracing of causes and effects, comparison of epochs, eras, movements, nations, and judgment as to character. The free discussions and clash of opinions aroused by the teaching of history are a healthful mental stimulus and moral tonic, and may call out the best powers of speech.

15. The study of rhetoric has its place in the chain. Where this is pursued in a living way by the study of authors to discover qualities of style,

and with some practice in composition calling for invention, the imagination may be aroused and the critical taste awakened and considerable skill acquired.

16. The study of English literature, embracing the critical examination of a few and the generous reading of many books with an inquiry into the personal history and habits of authors, an analysis and comparison of their writings, with frequent exercises in oral and written criticism, serves to kindle an enthusiasm for literature and a striving for excellence in the use of language.

17. Written examinations in the various subjects pursued in school can be made very serviceable as a training in language by encouraging the student to put upon paper, in good shape, without special preparation, what he knows and thinks regarding the topic proposed for discussion. This, of course, is not accomplished where the examination consists in putting down in bald form memoriter answers to a few questions arranged to probe the memory.

18. Nothing in the entire range of common school studies, when properly taught by introspection and observation, is better fitted to be made a helpful means of language training than psychology. When the student is trained to examine his own powers of mind; to compare his feelings and trace them to their origin and follow them to their expression; to note the large part they play in human action, and their important rôle in literature; to examine his own processes of thought, and to discern the vital

relation of mental energy to all modifications of language, he is stimulated and helped in thinking, and guided in his communications of thought in a very satisfactory manner. The study of the constitution and operation of the mind itself leads to the very fountain of language.

19. Nothing can take the place, as a means of mental culture as well as an instrument for linguistic drill, of the habit of original composition. We learn to write by writing. Pupils can be led to choose topics suitable to their stage of culture, to gather material from observation, experience, reflection, conversation, and reading; to organize the material into a pleasing and forceful essay. Great facility can be acquired by youth of twelve to fifteen years of age in this kind of work.

The preparation of a graduating essay can be made to mark an epoch in a student's intellectual history. The sneer often hurled at these performances simply betrays the ignorance of the sneerer.

20. This brief statement of the subject of language training in the public schools would be incomplete if no mention were made of the study of some foreign language. Every American boy or girl destined to any high plane of culture should have the advantage of studying at least two languages in addition to English.

The classics should be studied for the purpose of securing that peculiar phase of mental training which experience has shown can be attained in no other possible way. It imparts a finish to the style that is inseparable from classical study.

In the study of the classics, in order that the best linguistic results may be reached, a larger use should be made, on commencing the study, of the so-called natural method until the pupil has acquired a vernacular familiarity with idioms and common phrases.

Pains should be taken to awaken in the mind a lively interest in the author and his subject, and to bring the student *en rapport* with the writer.

Translation at sight should be practised until the habit of depending so largely upon the dictionary, as is so common, is broken up.

Reading extended passages, such as an entire oration of Cicero in Latin, following the thought without translation, is excellent.

The grammar should be subordinate to the literature, and the Latin lessons should be less a parsing exercise than a reading exercise.

One of the most marked differences between secondary education in America and in France and Prussia, for example, is in the meagre time given in our schools to linguistic study. In the Prussian gymnasium nine years are given to Latin, six to Greek, eight to French. In the Reale Schule, Latin (with fewer weekly exercises) runs through nine years, English six, French eight. In the French secondary schools Latin has seven years, Greek five, English or German ten. In our preparatory schools, from which students graduate at about the same age as from the German gymnasium, the average time given to Latin is less than four years, and to Greek about two and a half.

(See proceedings of N. E. A., 1885, page 207.)

Meantime it is possible to acquire a practical working knowledge of German or French, with some acquaintance with a foreign literature, and an invaluable habit of thinking and speaking in a language different from the vernacular.

It will thus be seen that training in language runs parallel with the whole course of study. Every attainment in knowledge in any direction, and every advance in power of thought, and every higher stage reached in feeling, should be accompanied by a corresponding increase in ability to speak and write. Linguistic power is both a fruit of culture and a means of culture. It is means and end. It is in itself a most worthy end, and deserves a far higher place in the public school than is generally accorded to it.

METHOD OF TEACHING LATIN.

In 1882, while principal of the State Normal and Training School at Potsdam, New York, I wrote the following sketch of a method of teaching Latin which was at that time pursued there by Mr. Shumway.

1. With his class of about thirty beginners, of from ten to fourteen years of age, he employs the objective method, making constant appeal to the eye. By the use of maps, charts, pictures, and familiar objects, the liveliest interest in the work of the classroom is maintained.

2. The child learns to associate the Latin word directly with the object. This is the natural method of learning a language. The symbol and the thing

symbolized go together. The thought and its expression are learned at the same time. Words and ideas are inseparable. Ordinarily they are separated by the English expression. First the idea, then the English term, then the Latin; which is artificial and unnatural.

3. The next class, of about thirty (also beginners), of from sixteen to twenty-five, began by committing to memory the first chapter of Cæsar. Great stress is laid in both classes upon absolute accuracy and perfect familiarity with the text of what is committed, thus training the memory.

4. In both classes, by frequent repetition of the text, by constant question and answer, the ear is trained to a nice discrimination in pronunciation, accent, melody, and rhythm.

5. In both classes great use is made of the blackboard, the students being required to write, thus compelling the hand to do service with the eye and the ear.

6. Questions based upon the text, and admitting of answers in the words of the text, are put to the student from the very first. This necessitates the closest attention on the part of all. The student must grasp the Latin question. He must think in Latin. He must feel idiomatic differences. This, long continued, leads him deep into the very spirit of the ancient Roman, and prepares him as no other process can, to read Latin literature appreciatingly.

7. The practice of replying to the questions orally and in writing, of converting prose into poetry, the

oblique into the direct discussion, and *vice versa*, leads to a knowledge of composition, practical skill in the use of the language, and a keen appreciation of the beauty and strength of classic literature.

8. Grammar is learned first by practice. Use renders grammatical forms familiar to the student, so that error offends as though he were a native. Changes in inflection and order are observed as they occur, and by the process of induction the laws of change are reached. The student is taught to systematize and tabulate these changes, and construct his own declensions and conjugations.

9. The student is exercised in reading easy passages at sight, the difficult portions being at first omitted. This gives confidence and keeps up the interest, and by necessitating careful attention to the root form and the inflectional endings fixes these in the mind and greatly facilitates progress in reading.

10. Students are encouraged to put Latin questions to the teacher, and the older students put questions to each other in class, all mistakes being at once corrected either by the pupils or the teacher. Those who show the greatest aptitude are called on to conduct the recitation, so as to acquire skill and confidence.

11. The older classes study the grammar very systematically and thoroughly, devoting special and prolonged attention to the various cases and their significance, the ablative absolute, the subjunctive mood, and other peculiarities of the language.

12. New words, as they occur, are explained in

Latin by their derivation, synonyms, opposites, or their meaning is made apparent by paraphrase, explanation, or illustration. A slavish dependence upon the dictionary is thus avoided.

It will thus be seen that the method is eclectic; aiming to introduce the objective, conversational, inductive elements, and thus to modernize the teaching of the ancient languages, it nevertheless clings to whatever is good in the old way. The grammar and the dictionary are not cast out, memory is called upon to do her royal work, and no attempt is made to teach a language in ten weeks. The system is flexible, and, in the hands of competent teachers, may be used to advantage in classes of all grades of advancement.

VIII.

TRAINING THE WILL.

He who is firm in will molds the world to himself.

Goethe.

The unity of the self is the will. The will is the man, psychologically speaking.

John Dewey.

Vital moral training cannot end with emotion or desires; it must issue in right action.

E. E. White.

Motives impel the will, but they do not compel it.

Noah Porter.

In good education, then, in genuine instruction, in true training, necessity should call forth freedom; law, self-determination; external compulsion, inner freewill; external hate, inner love.

Friedrich Froebel.

Educate toward a knowledge of truth, a love of the beautiful, a habit of doing the good, because only through these forms can the self-activity continue to develop progressively in this universe. These forms — the true, the beautiful, and the good — will bring the individual into union with his fellowmen through all eternity, and make him a participator in the divine-human work of civilization and culture, and the perfection of man in the image of God.

W. T. Harris.

VIII.

TRAINING THE WILL.

Education must lay stress on the truth that nothing in the world has any absolute value except will guided by the right. — ROSENKRANZ.

MAN as an efficient agent is essentially will. Whatever may be his intellectual attainments or his capacity for feeling, if he is deficient in will-power he is like a locomotive without steam, or a watch without a mainspring. The will is the dynamo of the soul, the source of motor energy. And yet the will is not something apart from the soul: it is rather an all-important part of the soul. It has indeed well been called "the soul in action." It is concerned in every conscious act of mind or body. The babe that stretches forth its tiny hand to grasp the toy, or follows with its eyes the moving light, does so by an act of will. To cultivate the soul in any direction is in a sense to train the will.

Nevertheless, it is not without significance that we speak of man as having intellect, sensibility, and will. This trichotomite division is suggestive of reality, of distinction, and of the possibility not only of regarding the will apart from the intellect and the feelings, but also of making it a special object of care in the work of education. To train the will is not the same thing as to train the intellect. Will-power is by no

means synonymous with learning. One may be a scholar and not have a cultured will. One may have many of the characteristics of a strong will without great learning. It is possible to secure a seeming development of the intellect at the expense of the will. So-called education may thus be purchased at an immense cost.

In order to see the full significance of the will in its relations to human life, and to understand the method of its development, it may be well to attempt a fuller definition.

We sometimes think of will as nearly or quite synonymous with force or energy. Will, in this sense, is closely related to physical vigor. The primary basis of all will-power is, or at least the condition of its manifestation is, animal life. The will as a physical agent is evolved in the laboratory of the stomach; it is proportioned to the amount of food eaten and assimilated. There is a modicum of truth in the doctrine of the materialist, that a "man is what he eats." This highest psychical force draws its supplies in part from physical sources. This is not to identify will-power and physical force: it only recognizes the intimate relationship between them. The mind thinks with the brain, but the brain is not therefore the mind. The physical force generated by a strong body and a healthy régime are the crude material out of which the soul fashions its most delicate impulses and forges its most irresistible engines. The developed will assumes sway over the body, and, as in the case of John Calvin, may long endure and accomplish great deeds in a diseased and feeble body.

Another phase of will is persistence. The forces of life manifesting themselves in psychical activity tend very speedily to flow in certain fixed directions, and to persist in these directions. The child has its favorite sports, which it pursues with tireless energy, and the will-power thus expressed grows by its own activity. It is thus that habit comes to exert so potent an influence over the will. That which we are accustomed to do we do with comparative ease and pleasure. But when life's energy takes a given direction from force of habit rather than deliberative choice, it becomes a sort of inertia, a low order of will-power.

One may be at the mercy of his passions, all his powers being swayed by ambition, envy, jealousy, rage, hatred, avarice, lust, or by mere caprice. Catiline is an example of a man of enormous will-power consecrated to evil.

When we speak of will culture as an aim of the schools, we mean by will something far higher than mere animal or physical force, flowing blindly in certain accustomed channels, or swayed by base passions. We mean a self-conscious, a self-directed force, spiritual in its essence, multiform in its modes of manifestation, steady in its operation, seeking always the highest aims, actuated by the purest motives, and, under the sway of reason and conscience, accomplishing the noblest ends and mightiest results. Columbus searching for a new continent, Kepler seeking to formulate the laws of the motion of the planets, Livingstone exploring the Dark Continent,

Grant subduing a rebellion, Sumner striving for the overthrow of slavery, De Lesseps constructing a ship-canal, Edison applying electricity to practical purposes, Frances Willard working for the cause of temperance, and Bergh struggling for the prevention of cruelty to animals, are examples of the sort of will-power for which we have urgent need.

All the pupils of the schools cannot become equally eminent in the display of great virtues, and it is neither necessary nor wise to hold before them or before ourselves the ideal of fame or publicity, or even extraordinary achievement. What we do well, however, to remember is that the same high quality which we call will-power is demanded as well in private as in public, in the ordinary as well as extraordinary circumstances of life. The teacher of a country school seeking to interest, instruct, and train to useful manhood and womanhood his little flock, the captain of a company of soldiers fighting Indians on the frontier, the pioneer missionary laying the foundations of a Christian church, the conductor of a railroad train striving to secure the safety and comfort of his passengers and the rights of his employers, the village physician in his warfare with disease, the widow struggling to support her fatherless children, the youth conquering for himself an honorable place amidst the fierce competitions of modern life, the private citizen working with voice and pen for the promotion of the public weal, the nurse watching by the sick, the laborer doomed to a life of toil and a struggle with poverty, all alike have

need of will-power of a high order. There is no place so high and no place so low as not to call it into requisition. Man's very position in the scale of being is determined by the presence or defect of this unconquerable energy, wisely directed to legitimate ends.

How shall we secure the development of this regal power, this masterful spirit, this preëminently human element?

First. We must make use of all means whatsoever that tend to create, conserve, or economize the vital forces. Many children, both at home and at school, become feeble in body and weak in will from a neglect of observing the ordinary laws of health. Teachers are sometimes careless of the proper heating, lighting, and ventilating of their schoolrooms, and thus become responsible for the undermining of the child's health and the destruction of his will-power. The abolition of the out-of-door recess without any proper substitute for it — thus depriving the pupils of a change of attitude, relief of mind, abundance of fresh air, contact with nature, exhilarating exercise, spontaneity of action — is an innovation of doubtful propriety and fraught with possible evil consequences of no slight magnitude.

Some form of physical exercise is essential to the child's well-being. Excursions into the woods, brisk walks, rambles by the brookside, climbing of hills, rowing, coasting, skating, if not excessive, are all admirable means of invigorating the system, stimulating the appetite, digestion, and food assimilation.

Ordinary school life may be too confining for the young, and too repressive. It aims to secure discipline not by properly controlling and directing energy, but by diminishing it. One might as well seek to control the movement of machinery not by regulating the throttle-valve, but by extinguishing the fire. What is needed in the schoolroom is not enforced quiet, but regulated energy.

Much of the energy of children is wasted, not in play, but in wantonness, quarreling, purposeless exercises. The same force that the elephant uses in crushing his way through a thicket would enable him to bear upon his back many a useful burden along the highway. The force of the stream that once leaped and tumbled in wasteful wildness down the Falls of Saint Anthony, now guided in proper channels turns the vast machinery at Minneapolis, converting wheat into flour and prairies into gardens. The vast expenditure made by European nations in armies worse than useless would, if wisely directed, add year by year enormously to the daily comfort and elevation of their people, and the rapid accumulation of all the products of an enlightened civilization. The secret of wealth is the economy of production — the wise direction of energy. It costs as much to construct a gun as a plow, to make a sword as a pruning-hook, to build a distillery as a mill. A saloon is more expensive than a meat market, and a standing army costs more than a system of universal education.

So the native energy of the child that runs to waste,

or that expands itself in mischief, cruelty, or wickedness, only needs to be turned into right channels to become fruitful of all high and noble results. Attention, punctuality, regularity, persistence, decision, patience, endurance, fortitude, courage, are so many modes of will, so many channels of usefulness into which the exhaustless streams of child-life may be poured. The melting snows that rush in mad torrents down the mountain-side, or lose themselves in the turbid river or lifeless sea, when guided by the hand of man enrich the arid plains of Utah and make the wilderness to blossom as the rose.

The child is stimulated to a healthful exercise of will by personal example, proper instruction, wise direction, kindly encouragement, suitable admonition, faithful warning, and just punishment. Will-power is not strictly a fixed quantity dependent wholly upon physical conditions. It is a moral force and a variable quantity susceptible of very great increase. Thomas, standing like a rock at Chickamauga, inspired all his army with heroic courage that successfully resisted the fiercest assaults of the Confederate army.

Second. Will culture involves a rightful care of the sensibilities — the forces that move the will. The will follows the lead of the heart. Men pursue with energy that which they love. Erasmus, impelled by a love of learning, Luther by enthusiasm for reform, Lincoln by an all-absorbing patriotism, put forth herculean efforts in the prosecution of their lifework. History and the annals of private life as well are

replete with examples of sustained energy devoted to the attainment of worthy ends. Familiarity with these serves often to kindle in young minds aspirations that burst into flame and warm into action all the energies of the soul. The difference between Grant the unsuccessful business man and Grant the greatest general of his age was the difference between a man drifting without a plan and a man concentrating all the energies of his being and all the resources of a mighty nation for the accomplishment of a heroic purpose.

Children are actuated by a great variety of motives, and one of the chief functions of the teacher is to call into proper, healthful exercise the many motives of which they are susceptible. All the appetites, desires, affections, and emotions of the adult slumber in the bosom of childhood. Not all of them are appropriate to childhood; none of them should be prematurely aroused. We are to avoid precocity as a disease. But we are more likely to err on the other side, and either allow the child's heart to lie fallow, or at most to call into activity only a few of the many motive-powers that are latent there. There are teachers that rule by the rod, and appeal almost wholly to fear; others evoke shame, others vanity, and others emulation. This, if not a base development, is at least a one-sided one. Think of the many sentiments that can exist in the child's heart. Love of approbation, desire of society, love of knowledge, truthfulness, love of the beautiful, desire of success, consciousness of power, self-respect, sym

pathy, benevolence, generosity, filial and fraternal affection, patriotism, loyalty, fidelity, reverence,—all these and many more can be called into gentle exercise and forceful activity. Under their influence his whole being may be aroused, and his will be strongly and beneficently impelled. Many a boy has been changed from a mischief-maker and a truant into an obedient and industrious student by being taken into his teacher's confidence and made to feel that he was respected and trusted. Others have been reclaimed by being employed in some congenial, useful occupation. Nothing can take the place of the careful study of the child's heart.

Men have long and justly held in derision that system of agriculture at the South which sought year after year to extort from the soil but one kind of crop, whether cotton or tobacco. The evil was surpassed only by the still more pitiable social system that subjected a race of human beings to the domination of one sole motive, fear of the lash. What shall be said of a system of education which, assuming to develop the boundless possibilities of a human soul, calls into action the fewest possible number of its capacities of feeling and of its motive forces?

Third. The moral being is one who out of all the variety of motives by which he may be actuated yields himself voluntarily only to the highest. The enlightened reason chooses between motives and gives the preference to the best. Ambition and justice, desire of wealth and pity, love of approbation and truthfulness, love of family and patriotism, all alike,

each in its place and degree, are honorable. They may coincide or they may conflict, and the test of high character is the preference which is shown them in the decisive moment. The highest motive is a conscientious regard for truth and duty, "love for the right as God gives us to know the right."

The goal of culture is freedom. In its ultimate analysis will is supreme. It is self-moved. Amid all the complexity of motive forces that act upon it, it yields itself of its own volition to the motive of its own choice. The will is regal, autocratic. Will culture is the training that results from the habit of instinctive, ready choice of the highest aims, and of unswerving devotion to the accomplishment of its desire. Will culture is training in choices.

Training the will to freedom can be done only in an atmosphere of freedom. The child must be early accustomed to self-reliance. He must make his own choices, and learn the sweetness and solemnity of liberty by self-directed activity.

Special emphasis should be laid upon the sin of "breaking the will," so strongly and so justly condemned by Kant. Corporal punishment, ridicule, sarcasm, humiliation, shame, or any infliction that degrades the child in his own esteem, is to be scrupulously avoided.

On the other hand, infinite pains needs to be taken to awaken a keen sense of self-respect, a profound consciousness of the personal dignity that attaches to every human being, and exalted aspirations after noble pursuits, scholarly attainments, and excellent

character. In our treatment of children psychologic optimism is better than pessimism.

The vast energies at work in human society developing our resources, molding our laws, shaping our industries, organizing and directing our social, political, and religious forces, should be under the absolute domination of conscience. The only safeguard that the republic can have against anarchy, riot, defalcation, partisan strife, the clash of race and class, and ultimate ruin of peace, prosperity, and liberty itself is that kind of will culture that seeks to enthrone reason and conscience in the bosom of every pupil in the common schools.

IX.

TRAINING TO LEARN.

ANY piece of knowledge which the pupil has himself acquired, any problem which he has himself solved, becomes by virtue of the conquest much more thoroughly his than it could else be.

HERBERT SPENCER.

INASMUCH as the child is self-active, and grows only through the exercise of his self-activity, education consists entirely in leading the child to do what develops this power of doing. Any help that does not help the pupil to help himself is excessive.

W. T. HARRIS.

THE idea which I have endeavored to give of the true relation of the pupil to the teacher, and which represents the former as carrying on his own self-tuition under the wise superintendence of the latter, is of course not new. Nothing strictly new can be said about education. The elements of it may easily be found in the principles and practice of Ascham, Montaigne, Ratich, Milton, Comenius, Locke, Rousseau, Pestalozzi, Jacotot, and Herbert Spencer. Those who are interested in the subject may find an account of the views and methods of these eminent men in Mr. Quick's valuable little book on Educational Reformers.

JOSEPH PAYNE.

IX.

TRAINING TO LEARN.

The essential act in acquiring knowledge is the act of learning, and this is the pupil's act. — E. E. White.

In the work of education — whereby the child becomes man, exchanging weakness for strength, ignorance for knowledge, awkwardness for skill, simplicity and inexperience for wisdom and confirmed character — many factors conspire. The child grows spontaneously. Just as the acorn becomes the oak the babe becomes adult, passing through the various stages of infancy and youth to maturity by virtue of its inherent energies and manifest destiny. The parent may aid this process of growth and development by warding off evils and affording proper supplies of food, clothing, care, and guidance. Associates at home and abroad lend a hand in unconscious tutelage. Nature, with all its varied forces, performs no small share in bringing the youth to a knowledge of himself, his powers and limitations, privileges and obligations. Even the dullest must heed her warnings and remember her teachings.

The chief agent in the great transformation, however, must be the child himself. All education is, in its ultimate analysis, self-education. The energy

which issues in growth or assimilates knowledge must originate in self and be self-directed. All the varied helps of home, school, and nature are but helps which the child must use. Like crutches, they are available only to him who has purpose and physical strength to handle them. The school, with all its appliances, libraries, laboratories, and teachers, is but an opportunity, valuable only in proportion as the pupil makes use of it. The teacher may do much for him by a wise and persistent scheme of training, so that each and all of the powers, physical, mental, moral, may be completely, symmetrically, and harmoniously developed. But this can be done only by the pupil's consent and hearty coöperation. The teacher may impart instruction, not only giving him facts and truths, but seeing, as well, that he commits to memory large bodies of knowledge as set forth in books, and yet fall far short of securing the best results aimed at in the process of education. Instruction is good as far as it goes.

Education is not only an individual, personal work, calling for the highest exercise of selfhood, but it is a lifelong process, requiring of the pupil that he shall be ever learning. His tasks are never done. Life's problems cease only with the grave, and the most diligent student finds the fleeting years all too short to enable him to exhaust any branch, however narrow, of human inquiry.

The great function of the teacher's high office is to cause his pupil to learn. His finished work is not

a walking encyclopædia, nor an intellectual athlete, but a student, an earnest, humble learner. If he can so do his work that his pupil becomes a diligent seeker after truth, finding in the pursuit itself a satisfaction second only to that which comes from a conscious grasp of the eternal verities of nature, he has performed a good work.

What then is meant by causing a pupil to learn? I use the expression in a somewhat unusual sense, perhaps, and should consequently explain precisely what I mean by it. By way of negative let it be said that it does not mean having him commit to memory stipulated tasks. A thing is not necessarily learned because it is committed to memory. A pupil may successfully memorize the lesson assigned him in a foreign language of which he does not understand a word. Some teachers would, and rightly too, have their students learn by heart portions of Cæsar as the basis or beginning of their study of Latin. Montaigne was wont to declare that to "know a thing by heart is not to know it." Without endorsing this extreme view, or even calling in question the very great importance of memorizing, it should be emphasized that merely memorizing is not all of learning, and is indeed a very small part of the whole process. Again, causing to learn does not mean what is often conveyed by the word instructing. To instruct is to lead the pupil to understand what the teacher presents. The instructor assigns lessons, calls for recitations, questions, illustrates, explains, repeats, tests, and examines until he feels

assured that the given subject has been understood by the pupil, and so in a certain sense mastered. This process is a higher, nobler one than that previously described. But even this may come far short of the end to be desired, for the teacher takes the initiative, prepares the lesson, sets the task, conducts the tests, and thus supervises the work in all its extent. The pupil may remain largely passive. Like a sundial he points the time by a shadow on his face only so long as the sun shines. Fénelon, with all his learning, eloquence, skill, and devotion, worked wonders for his royal pupil, but it must be said that his work was a splendid failure. What a youth needs is not a Mentor who, while guiding, stimulating, and instructing him, absorbs his will and overwhelms his personality. Education should conserve the individuality of the pupil. Perfected selfhood is the goal of culture.

1. The first fundamental condition, then, upon which rests the work of causing to learn, is a supreme regard for the child's individuality. His personality should be regarded as sacred and inviolable. Froebel was undoubtedly right in assigning so large a place to the child's dignity of person. He indeed saw in him — according to his pantheistic notions — a manifestation of divinity which led to the kindred error of supposing him to be prone only to good. Unfortunately this optimism is cruelly shaken in the practical contact with child-nature. Nevertheless, the conclusion drawn by Froebel that education is chiefly growth and must

be characterized by freedom and spontaneity is a great truth.

No teacher ever succeeds who seeks to subdue the child's will, to curb unduly his natural propensities, to ignore his tastes, to violate his wishes, or to disregard his own peculiar endowments. No two children are alike in their capacities ; no two are fitted to fill precisely the same sphere in life. Each one, if left free, has his own point of view, and will have his own peculiar conception of the universe. This individuality is ordinarily recognized at home, and spontaneity is encouraged. Society is compelled to consider it, and every individual carves for himself his own career. It is chiefly in school that the process of restraint, suppression, domination, subduing is too much practised. The grim spectre authority has erected his awful throne in the schoolroom, and upon his dread altar multitudes of innocent victims are daily sacrificed. Fortunately for humanity the instinct of selfhood is too strong to be conquered, and children, some by escaping from school at an early age, some by open revolt, some by apparent submission and real rebellion, and some by force of necessity, in after years of free activity, either avoid, resist, or in part overcome the benumbing effects of the so-called discipline and training of the schools.

Teachers should not tyrannize over their pupils, but should treat them with that respect which is due to free beings. We can make of the child a life-long learner only as we begin by calling into exercise,

from his earliest infancy, that innate energy which expresses itself in its own way, chooses its own objects upon which to exert itself, and combines them after ways of its own. This can be done without pampering wilfulness, or developing self-hood into selfishness or offensive egoism. Liberty is not license, it is self-imposed law. The child must learn because he wills to learn. His knowledge should be chiefly that which he has wrested from nature by his own efforts.

2. Closely akin to this reverence for the right of selfhood is another prerequisite to success in making of the child a learner, namely, the conservation and culture of curiosity. It is no more true that sparks fly upward and that water seeks its level than that children seek after knowledge. The mind was made for truth. Hunger is the divinely appointed precedent of food-taking, the one condition of nourishment. No hunger, no assimilation. Curiosity is to the mind what hunger is to the body. This divinely implanted force is the mainspring of action that impels all the mental forces and energizes all intellectual processes. What has the desire of knowledge not wrought? It has impelled the navigator through unknown seas, allured the explorer through untrodden continents, across dreary deserts, over pathless mountains and through trackless forests. It has stimulated invention, reared observatories, collected museums, founded colleges, established libraries, and has laid under contribution the heavens above us, the earth about us, and the depths of the ocean. Man is

never satisfied so long as there remain any secrets of mind or matter, history, science, or religion which he has not explored.

To know is his birthright, to learn is his prerogative. What is true of the race is measurably true of each individual of the race. It is not only his duty and his right to know, but it is his privilege and pleasure as well. To know belongs to man by virtue of his manhood. The desire to know is among the earliest manifestations of conscious life. The open eye, the outstretched hand of the infant is soon followed by the listening ear and the inquiring tongue of the child. To guard this impulse from injury, to gratify without dulling it, to stimulate without overburdening it, to direct without attempting to tyrannize over it, to keep it ever eager, vigilant, healthy is a great part of the teacher's work.

The child's curiosity will of necessity be directed largely by its innate tendencies. One child is curious after causes, another after means; one delights in birds, another in flowers; one loves nature, another books; one revels in stories of adventure, another busies himself with the laws of perspective and the fascinating mysteries of color, while yet another finds pleasure in mathematical problems and the laws that underlie them.

It may be asserted with great confidence that eagerness to know, springing from the child's innermost nature, is absolutely essential to constitute him in any true sense a learner; that this is planted by the Creator's hand in germ in every child's nature;

that it grows by what it feeds on, and that the teacher may and should supply those conditions by which this great gift should be kept in healthful activity.

3. This leads to a third important principle, namely, that to foster the spirit of learning in the pupil learning must be made pleasurable. Quintilian said, "Let study be to the child a play." Fénelon went to the extreme of making of the school a bazaar and of study a pastime. He would have nothing hard or disagreeable in education. "There all metals are gold, all flowers are roses." John Locke, while recommending a hardening process for the boy to prepare him for bearing life's burdens, would still make study attractive and throw around it whatever of delight is consistent with earnest labor.

It is doubtless true that education necessarily involves something of restraint, limitation, control, and labor, which is irksome to the average pupil. Perhaps there may be "no royal road to learning." There is an admitted necessity for discipline and direction on the part of the teacher. Education consists in part in learning obedience, in acquiring the habits of doing even disagreeable work from a sense of duty. Nevertheless, it is to be emphasized that the school should not be a prison within whose walls unwilling children are to be confined by force and driven to unwelcome tasks by frowns and threats and blows. The very atmosphere of many schoolrooms is heavy and depressing With nothing to

relieve the bleakness of the surroundings, the bareness of the walls, the hardness of the benches, the monotony of the recitations, the dreariness of the tasks, and the severity of the discipline, the school becomes to many a child a dreadful place from which even a factory affords a welcome release.

Whatever may be done to render the schoolhouse comfortable and tasteful, the discipline kind, and the methods of instruction attractive should be done in order that the associations of school life shall always be pleasant, and that the pupil may be led by the sweet allurements of the place to put forth his best efforts in the pursuit of knowledge.

The games, occupations, music, birds, and flowers of the kindergarten; the stories, the "Friday afternoons," the singing, and gymnastics of the primary and intermediate grades; the cabinets of illustrations, and excursions of the grammar schools; the workshops, laboratories, and growing consciousness of power and increasing appreciation of the value of knowledge characteristic of the high school; and the widening range of vision, profounder insight into truth, the greater freedom of choice and independence of labor, together with the genial companionship and stimulating example of great scholars to be found in the universities, should make of every stage of school life a delightful feast, and awaken in the mind of the student a burning zeal for knowledge. If this result fails the fault will often be found in the feebleness of the teacher or the faultiness of his methods.

4. Rising to a still higher plane in this ascending series we reach a fourth condition of success in developing in the pupil an abiding love of learning. All learning must be in its earlier stages intuitive; the child must be brought face to face with things. There is no possible way, from the very nature of the human constitution, whereby a child can have definite ideas of color except by sight; of odors except by smell. Each sense must be the medium through which the soul is brought into direct relation with those qualities of matter to which it and it alone is adjusted. If the pupil is to know the qualities of things he must be brought into vital contact with them. It is not true that one can have no knowledge except that which is intuitive, but it is true that the basis of all knowledge of material things is sense perception. The fundamental data of knowledge, what Pestalozzi calls "mother ideas," are those primal notions of things that come to us through the senses. The child must be put into right relationship with nature, and his knowledge of distance, direction, plants, animals, minerals, industries, commerce, political economy, and history must rest upon personal observation. Physiology cannot be successfully taught without the skeleton, nor physics and chemistry outside of the laboratory.

The mind brought into proper relation to nature, to things, to objects of sense, is allured to activity, gratified, fed, developed, educated. Learning becomes a perennial and exhaustless source of joy. But an attempt to teach science from books, before the

preliminary ideas have been made familiar by observation, is not only futile, but destructive of the powers of the mind. Many a child is ruined for life by the deadening process of cramming his memory with words of whose meaning he is ignorant. Words are but symbols, and are chiefly valuable as reviving the memory of past experiences, or of putting into convenient and orderly shape the processes of our own thinking, or at best of stimulating the mind to put itself by its own energies into the same state as that occupied by the writer. As a general law words should come after ideas; the child should learn things before he learns about things; he should derive all his ideas of number by counting, combining, separating, dividing, weighing, and measuring things; he should not be taught to read until he has ideas and thoughts, and can embody them in sentences of his own structure. Books should supplement and not precede oral instruction. Facts should precede principles; processes come before rules. Grammar and rhetoric should always follow practical language; literature should comprise the reading of the authors and not merely reading about them; foreign language should be learned by use and not from grammar. Geography should as far as possible be learned from travel, and psychology from introspection.

This great law of nature, the imperative necessity of knowledge at first hand, has been repeated by all the great reformers in educational methods, by Montaigne, Rousseau, Locke, Comenius, Pestalozzi, and

Froebel, and is so patent as to command at once the assent of every thoughtful mind, and yet it is ruthlessly violated every day nearly everywhere and, I might almost say, by nearly everybody. And Nature avenges herself by blinding the teachers who do it and by stupefying the minds of their victims. The school, which should be a seminary, a place of seed-sowing, becomes a charnel-house, the burial-place of fond hopes and youthful aspirations.

The meagre results that often issue from long years of schooling, the vast number of pupils that drop out of the lower grades, the few that find their way to college, the spirit of indifference to learning that pervades so many educational institutions, the oft-repeated criticism of the public school system for its lack of practical results, the widespread agitation in favor of industrial training, and the bitter complaint of many distinguished men as to how they were educated, all point to a real defect in our system of instruction. It is the part of wisdom to locate the evil, if possible, and then to remove it.

None perhaps will be bold enough to deny that the evil consists, in part, at least, in the too prevalent habit of substituting words for things, books for nature, and that the remedy for this form of the evil is to be found in relegating the textbook to its proper place, in emancipating the pupil from bondage to the letter, and in restoring to him the freedom of intercourse with nature, either directly or by means of cabinets and laboratories.

5. Another cardinal principle of education, spring-

ing from the very constitution of the human mind, is that the fullest activity of all the child's powers must be called into requisition in the process of learning. The sources of human knowledge are few. The primal source of knowledge of the world without is observation, of the world within is consciousness. When we add to these reflection, testimony, and authority we have exhausted the category. Each of these should be duly recognized. Neither can be a substitute for the other. The child should be habituated to avail himself of each and all of them. It is not enough that he be brought into contact with nature. The North American savage and the African bushman have always lived in contact with nature, and are savage still. Men grow up in the country with no knowledge of botany, and in the city and remain ignorant of society. The work of the teacher is to stimulate the pupil to use his senses. But the senses may easily be overstimulated, and the man become thereby brutalized. The cat has a sharp eye and the dog a keen smell without becoming intellectual. There is imperative need that the child shall be led to think and be exercised in forming judgments. Agassiz is said to have declared that "the chief thing in education is the habit of comparison," while Montaigne laid great stress upon forming the judgment. The Jesuits were intent upon training the memory, while Locke asserted that it was incapable of being trained. Setting aside these partial views we may state, what would now be generally accepted, that in the acquisition of

learning all our faculties are to be engaged. The senses give us material qualities; consciousness, mental states; reflection brings to light relations, causes, forces; memory brings back the past, and imagination presents the distant and the unseen. Testimony weighed, sifted, digested is our reliance for knowledge out of the range of personal experience, and authority supplies what lies beyond the reach of both our experience and our reason.

6. To cause a child to learn consists largely in directing him to the right sources of knowledge, showing him how to avail himself of them, and plying him with such motives that he will make right use of them.

Books have their value as testimony to matters of fact and as authority on questions of doctrine, and every child who is to be a learner must know how to use them. They are now the chief source of knowledge to every student. No man can safely ignore them. They bring within the reach of the individual the results of the labors of the race, and make available in a brief space of time the scholarly toil of past ages. When the learner enters a library he becomes a citizen of the world, a companion of the great, and is restricted in his companionship with the wise by no limits of time, space, nationality, creed, or caste. Books are priceless treasures. They are to the scholar among the necessaries of life, like food, fire, and raiment. But books are helpful only to him who knows how to use them. They are not made to be devoured either by the

stomach or the memory. Nor are they a substitute for thinking, but only an aid. They should not precede, but should supplement, personal effort. They are helpful when rightly used, but deadly hurtful when abused. Idolatry is misdirected worship; mere memorizing of textbooks is a sort of intellectual fetichism. To be taught to observe, to reflect, to think, to read, to reason is to be put on the great highroad to learning.

This law of activity which requires that the student through his entire course of study should be called upon to put forth his own energies admits wide and varied application. It underlies the occupations of the kindergarten. It explains the true meaning and intent of object-teaching, whereby the child is led to study the object for itself and report the results of its observations. It is the secret of language lessons, in which he is required first to think and then to give expression to his thought in his own way. In form and drawing he is led to inventive efforts; in geography, to map drawing and modeling in clay; in number, to constructing his own tables and framing his own problems. In geometry the pupil works out original demonstrations, and in the study of the natural sciences he seeks by experiment and induction to discover for himself laws and classifications. It is urged by the ablest advocates of industrial training that its chief advantage is that it stimulates the mind to greater and more varied activity and supplements mental by muscular action; that the pupil becomes a creator,

and learns by doing. One great privilege in a normal school is the opportunity of teaching while studying, for teaching is a capital way of learning. Recitations, reproductions, written examinations, composition, original investigation, all rest upon the recognized principle that one condition of learning is the calling of the student's powers into activity. What is urged here is the more complete recognition of this law in all school work, in the learning of Latin, Greek, and history as well as in the physical sciences.

It was a favorite theory of that able writer, Jacotot, so much eulogized by Joseph Payne, that a teacher may teach what he himself does not know and that a pupil may learn everything from a very few things. "*Tout est dans tout*," he insisted. His method of proceeding went far toward justifying what at first appears paradoxical, if not absurd. The teacher does not teach, he incites his pupil to learn. Supplying him with a suitable object for study, he proceeds to question him as to what he observes and what he thinks. Under the teacher's guidance and stimulus he becomes deeply interested in the pursuit, brings to bear upon it all his energies, and achieves marvelous results. Although his method was wholly different, Socrates, the greatest teacher of antiquity, proceeded upon the same principle — that his business was not to teach, but to set his pupils to learning. This he did by a very effective method of questioning, which led them to the most intense mental activity and independent research.

In conclusion, let me cite the example and method of the Great Teacher, whose influence in inciting men to become devotees of sacred learning has been so widespread and intense for wellnigh two thousand years. Though divine in his personality, he yet respected the individuality of every man, lived on familiar terms of intimacy even with the lowly and ignorant. While making revelations to men of the hidden mysteries of God's kingdom, he concealed far more than he revealed, and while feeding their curiosity, he fed it only to intensify its hunger. He threw about his teaching the charm of parable, simile, and story, and illustrated his doctrines by deeds that appealed to the senses. He led his disciples to the seaside and the mountain-top, and by his words threw a halo around not Palestine only, but over all nature as well. He incited his pupils to activity by telling them that only those willing to do his will and keep his commandments could know his doctrine. We may not slavishly copy his example, but if we would succeed in arousing in our pupils an abiding devotion to learning, we may with profit study his methods and strive to catch something of his spirit.

X.

TRAINING IN MUSIC.

MUSIC is the universal language of mankind.

H. W. LONGFELLOW.

SINGING is as natural to man as speaking, and for any reason that appears to the contrary, it should be as universal.

JAMES CURRIE.

MUSIC religious heat inspires.
It wakes the soul and lifts it high,
And wings it with sublime desires,
And fits it to bespeak the Deity.

ADDISON.

WE attach such supreme importance to a musical education because rhythm and harmony sink most deeply into the recesses of the soul, bringing gracefulness in their train, and making a man graceful if he is rightly nurtured.

PLATO.

X.

TRAINING IN MUSIC.

Unless a schoolmaster know how to sing, I think him of no account.
— LUTHER.

WE are slowly outgrowing the notion that the common schools should confine their instructions to the "three R's." Preparation for the duties of citizenship is not completed when a child can read a ballot, write his name, and count the price of his vote. Gradually the curriculum of even the commonest school is enlarging so as to include physiology, history, morals, and civics.

Vocal music should be taught scientifically in every public school, as a regular study, and special attention should be paid to it in all the lower grades, particularly the primary and the kindergarten.

One of the obvious reasons for this is that music lends a charm to the school and renders it attractive. The kindergarten games with musical accompaniment are fascinating for little children, and in the primary grades no time passes more delightfully than that spent in singing. With proper training, the love for music grows with the growth of the pupil. Even in academy, high school, normal school, and college, music hath still its charms, and the recollection of hymns and the echo of songs linger long in the

memory of graduates and recall some of the sweetest experiences of schooldays. There are very few children indeed that are not susceptible to its influences, and even those who do not sing themselves delight in hearing others. School is not attractive to all. Many find its restraints irksome, its routine monotonous, its discipline hard to bear. Whatever can be done to awaken in such pupils a love for school should be done. To some of them certainly music may be winsome.

It is an aid in school government. It softens the childish asperities, sweetens the temper, and predisposes to obedience. Harmony is the soul of music and where this reigns discord vanishes. Especially is it true that teachers who love song are less likely to be snappish and to stir up antagonisms than those who do not. Singing at the opening of school brings at once all hearts into unison and is an admirable preparation for the work of the day. Those who have come to school bent on mischief are disarmed. When school closes with a song in which all join, the tired mind finds rest, the overtaxed nerves are relieved, the little annoyances of the day are forgotten, wounded feelings are healed, and the children go to their homes, not to find fault with the school, but to praise it, and, instead of plotting mischief for the morrow, they plan pleasant things.

Music is helpful as a means of physical training, for it promotes deep breathing, erect posture, and encourages a proper regard for the throat and lungs as the instruments of sound. By cultivating the

voice it becomes specially valuable as an auxiliary to pleasing conversation, good reading, and elegant speaking. It is an invaluable means for securing mental development, the chief end for which schools are established. Rightly taught it develops attention, observation, especially trains the sense of hearing, cultivates the memory, the imagination, and the judgment. It secures precision, promptness, and develops good taste. It promotes cheerfulness, fortitude, goodfellowship, and an appreciation of the mutual dependence of all who live together in a community. It is a preparation for good citizenship.

It is a thought worthy of especial consideration that the effects of music learned at school are felt at once in the home circle. The busy mother and the tired father may not care to hear the child recite the multiplication table, analyze a sentence, describe the climate of China, or read a selection from the Fourth Reader, but they will be pleased to listen as he sings while at work or play, and often that song is the very breath of heaven to drive from heart and home the clouds of care and sorrow. The mass of school-children come from the homes of the poor, where life is serious and where there is not much to cheer. A merry child, singing the songs of the school, is an angel of beauty in such a household. Often children of the same family or the same neighborhood form a choir whose music is one of the greatest charms of the circle. Life is bitter enough at best, and even under the most favorable

circumstances the weight of care is hard to endure. We need the help of music to gladden the heart, cheer the hope, and drown our sorrows. In what other way can its sweet influence be so widely diffused as by its introduction into all our schools whence it permeates the humblest cottage as well as the more favored home?

A very large proportion of our population have an interest in some form of religious worship where music is employed. Musical instruction in school enables the children to share in this delightful service and thus becomes in the highest degree tributary to their well-being. Those who insist so strongly that the schools should be practical and prepare their pupils for their various spheres in life must concede that the ability to sing is a preparation for home life, a passport in society, an indispensable prerequisite to participation in church service, and a sweet solace to many even in solitude.

Every one who has ever been in Germany knows how large a part music plays in the pleasures of the people. Their musical festivals are attended by thousands who find in them their highest delight. The over-driven people of America need the recreation, the amusement, the happiness, which would flow immediately out of universal instruction in music in our public schools.

Unlike many of the popular amusements, music leaves no sting behind: its tendency is to refine and ennoble. Certainly it is incomparably better for the people to love music than to love prize-fighting, bull-

baiting, horse-racing, or even boat-racing or ball-playing. It is suitable for men, women, and children; it is within the reach of all; promotes sociability, improves the manners, and offers little inducement for excess or immorality.

An incidental advantage growing out of our public school system is the equalization of life's blessings. Wealth and all its attendant advantages tends towards aggregation. The rich grow richer and the poor poorer. Classes grow apart, social distinctions incline towards fixedness. Caste springs up. The poor grow disheartened, and social antagonisms, jealousies, hatreds, spring up that threaten the peace and prosperity of all. The public school tends to prevent all this by putting the rudiments of education, which are the elements of power, into the hands of the poorest. The rich, by the pittance of school-tax, maintain a system of education that calls into exercise all the latent powers that slumber in the minds of the children of poverty, awakens ambition, gives an appreciation of beauty, develops a consciousness of power, a sense of dignity, and starts them in life's struggle with something like an even chance. The public school levels up. Cultivation in music plays a large part in this leveling-up process. It is in its nature æsthetic, it reaches the taste, cultivates a love for beauty in all its forms, and opens to the child some of the rarest pleasures which otherwise might be the sole prerogative of the rich.

Another great function of the American public

school is to awaken in the hearts of our youth a sympathy for each other. The most obvious feature of our population is its mixed character. We have all nationalities represented, and in many parts of the country the native and the foreign elements are about equally divided. We have Germans and French, English and Irish, Russians and Poles, Italians and Scandinavians, Negroes and Chinamen. The elements of racial war are here in great abundance. Our peace and prosperity as a nation depend largely upon the complete harmonization of these clashing elements. This is our great task — the one great problem of the age. To break down race distinctions, destroy race prejudices, annihilate inherited hatreds, and bring all these peoples under the sway of common ideas and sentiments, is an undertaking that may well stagger the stoutest heart. But it must be done. Out of this manifoldness we must be one people. *E pluribus unum* is our watchword.

There is but one agency that is competent for this mighty task: that is the American public school, where all are on a level, where rich and poor, high and low, native and foreign, white and black, the Christian and the "heathen Chinee" meet together, and the common school is the friend of them all. The first bond of union is a common language. The English children who speak with vernacular fluency the same tongue are no longer aliens to each other. All other differences are slight compared with a difference of speech. When this is gone intercourse

is made easy, misunderstandings disappear, reconciliations are easy, and children readily fraternize, and, in many cases, as readily intermarry. Race peculiarities are not troublesome when under the same roof, and German and French blood flow quietly together in the same veins.

The influence of song in breaking down discordant differences is scarcely less than that of language itself. I stood recently in the great school at Carlisle, Pennsylvania, where four hundred Indian boys and girls, representing forty different tribes, with generations of bloody antipathies, were singing, and as the volume of song rose in its majestic and harmonious swell, all hearts seemed united. When I saw a little later out on the campus, Sioux, Pawnees, and Apaches, parading arm in arm, seemingly unconscions of any tribal distinctions, it seemed a prophecy of the good time coming, when under the influence of the public schools the children of this land will know no difference of ancestry, but will all be Americans. Music is not the only nor the chief agency in this tremendous transformation, but it is one of the greatest, one of the most effective, and one of the most indispensable factors. To neglect it is the height of folly, to use it the highest wisdom.

Another reason for teaching music in the public schools is that it is a part of a complete education. Education is the unfolding and disciplining of all our powers. The capacity for music is just as much a part of our common human nature as the ability to

think. The appreciation of sounds is second in importance only to the appreciation of form and color. To neglect the ear while we train the eye is to discriminate unfairly against one of the chief senses. To educate a child and not train him in music is to give him a one-sided culture, a truncated development. He is not a complete man, he is defective. Incapable of appreciating the marvelous and exhaustless beauties of sound, unable to express his feelings in the most expressive way, shut out from sympathetic companionship of those more fortunate than himself, he has been robbed of his birthright.

The State has practically monopolized the business of education. The great mass of children receive no other training than that received in the public school. When they quit the public school, they quit systematic study. Their education in its truest sense is ended. If they receive no musical training in school, they never receive it. If the State does not provide for the culture of this important part of their nature, it will remain dormant. When grown to manhood and womanhood they will have a right to say to the State: —

"We are grateful to you for your care of us in childhood, for the provisions you made for our education, but we feel that your work was not complete. You taught us to read, but not to sing; to express our thoughts in words, but not in song; to appreciate the beauties of color, but not of sound. You opened the way for an appreciation of the

world's great poets, but not of the world's great composers." I do not see how the State can reply to this criticism. It has assumed to educate, it takes under its care millions of little children, and keeps them at school from five to fourteen, the most impressive period of life, and says to parents: "Ample provision has been made for the education of your children; costly schoolhouses, competent teachers, and extensive superintendence has rendered private work unnecessary." The State educates. This puts the State under the most solemn obligations to do all that is implied in the word education. At least if the State undertakes the education of the child during its early years, it owes to the child to do all that ought to be done during those years.

If music is ever to be taught it must be taught in childhood. It should begin in the nursery, be fostered by the mother, and encouraged in the home circle. But the time and place for systematic musical training is the school in childhood. It should find a place in the regular school curriculum and form a part of the daily exercises. It should be a study, a continuous, prolonged course, beginning with the simplest rudiments and leading the child on by successive steps, systematic drill, and much practice, until he can render difficult pieces, appreciate the highest classics, and himself know something of composition.

But the question whether the State shall teach music is much broader than it seems. It is really the question whether popular education shall be

restricted to the merely practical, the useful, the "bread and butter" studies, or whether it shall include those studies that refine and liberalize. Shall we teach only facts, or shall we also teach the beautiful? Is man only a beast of burden, or is he a social being and capable of the highest and noblest enjoyments? On every side is heard a clamor for industrial education, manual training, the teaching of trades. Some would convert the school into a laundry, a carpenter-shop, or a smithy; pupils into apprentices, and teachers into master-mechanics. While conceding the force of many of their arguments and a modicum of truth in some of the claims, it should be strongly insisted upon that the prime aim of schools is training of faculty, development of character, culture. A child trained to think, to feel, to enjoy, will find ways of getting a living and for gratifying his tastes.

Life does not consist in the abundance of things one possesses but in the ability to enjoy what one has. A large place in even the primary schools can be vindicated for vocal music, as a culture study, an instrument of refinement and of enrichment of the soul.

XI.

TRAINING TO USE BOOKS.

THE true university in these days is a collection of books.

THOMAS CARLYLE.

BOOKS are the best things well used; abused, among the worst.

R. W. EMERSON.

SOME books are to be tasted, others to be swallowed, and some few to be chewed and digested.

FRANCIS BACON.

IF I were to pray for a taste that should stand me in stead under any variety of circumstances, and be a source of happiness and cheerfulness to me through life, and a shield against its ills, however things might go amiss and the world frown upon me, it would be a taste for reading.

SIR JOHN HERSCHEL.

XI.

TRAINING TO USE BOOKS.

I am inclined to think the most useful help to reading is to know what we should not read. — FREDERICK HARRISON.

ACCORDING to the last published report (1884–85) of the Commissioner of Education, there are in the United States more than five thousand public libraries, with more than twenty million volumes. It is, therefore, a very pertinent question, What should be the relationship between the public libraries and the public schools? It is the purpose of this paper to outline an answer to this inquiry.

The public library would be comparatively useless without the public school. Men must know how to read before they need books. Indeed a very high order of intelligence is required before they are able to profit to any great degree by their use. There are good books and bad books, books full of truth and books not so full, books that energize and books that enervate, books on which men feed and grow wise, strong, and good, and books that render the reader weak, foolish, and vicious. Even the books that have come down to us from antiquity, sifted and tested by time, and stamped by common consent as classic, differ widely in merit, while a very large proportion of modern books have little or no permanent value. A library is, or at least may be, simply

a storehouse in which is gathered a miscellaneous collection of books, good, bad, and indifferent, ancient and modern, on subjects scientific, literary, and historical. To an ignorant man such a library is without significance or value. True the veriest boor may learn something by a visit to a botanical garden, a museum of curiosities, or a menagerie, but he will scarcely have even his wonder excited by a visit to a public library, unless it be at the folly of those who find any interest therein. Public libraries are for the educated: they follow and supplement the public schools.

If a library is to be really useful to a community, it is necessary that its readers should be specially trained for using it. They need to know not only what books are worth reading, but also how to read them. A large portion of the habitual patrons of the public library have a very low standard of choice in selecting their reading. They are about as competent to select their books as sick people are to choose their medicines or children their food. When students have learned to read, and have had their thirst for books awakened, they are just as likely to read bad books as good ones. The fevered man drinks ice-water to his detriment and the hungry boy gorges himself with green fruit to his sorrow. So too the curious child eagerly devours sensational trash, goody-goody nonsense, or poisonous literature, destructive alike of purity and strength. A part of the teacher's work is to guard him from the miasma of pernicious literature by fostering a taste for that which is wholesome.

The teacher can suggest to pupils valuable books suitable for their age, attainments, tastes, and necessities. Many a boy has been ruined by the dime novel, who might have been saved by reading books of real adventure and true heroism, suggested to him by some thoughtful, faithful teacher. Seldom does a day pass when the vigilant teacher has not an opportunity, either in class or in private conversation, to drop into the prepared soil of some pupil's mind a hint of some valuable book to read. When a reading class has become interested in a beautiful selection from some classic author, how natural for the teacher to say, "To-morrow I will bring from the library a volume of this author's works, and read to you another choice selection; some of you may wish to read the entire volume." Each reading lesson may thus unlock some fascinating alcove of the public library, and the lifelong habit of reading good books be inaugurated.

Pupils of the public schools need to be shown how to consult a public library. Many who enter the not always too attractive rooms, where long rows of books peep at them from behind barred doors, or grin at them from inaccessible shelves, or stand like well-drilled soldiers in solemn ranks, disguised with their paper uniforms, defying recognition, are bewildered and turn away empty. They need to be introduced to the library, to be shown its various departments and subdivisions, its catalogues, indexes, and bulletins, and the method of using them. They need to be instructed in the art of consulting

the books themselves; to have explained to them the significance of the table of contents and of the index, if the book is so fortunate as to have one, and the value of reference, cross-reference, and footnote. They should be taught the art of sampling, skipping, extracting, and comparing, and be thus inducted into the science of transferring to their minds from the printed page the "words that breathe and thoughts that burn," and of converting them into mental furnishing, spiritual essence, and practical fibre.

Men who know how to read a book with discriminating intelligence, appreciating and appropriating its best things, discovering and discarding its errors, are rare. To read well is to think well. Few think well who have not been especially trained to think. One of the privileges of the teacher is to read to his students, to hear them read, not as a reading exercise, but as a process of training them to the profitable use of books.

Every school needs to have its own books of reference and supplementary reading, a miniature library which should be in daily use by the pupils, freely accessible to all under the constant supervision and direction of the teacher. On his desk should always be found books germane to the subject he is teaching: a mathematical dictionary for the arithmetic class, books of travel for geography, standard works in history and science to which students should be constantly referred for detailed statements of facts, extended illustrations, and full discussions such as are not practicable in a classroom nor appropriate for a textbook.

A part of the time of many recitations may be profitably spent in hearing informal reports from the students, on what they have read in books designated by the teacher, on topics assigned for investigation, or as to what they have found of interest in their miscellaneous reading.

Topical recitations, preparation for which has been made by the pupils by the examination of books taken from the public library, are especially for advanced classes particularly valuable.

In Providence, Worcester, and other cities, sets of books can be taken from the public library for school use. Students who have learned to use these library books as well as the dictionaries, cyclopædias, and books of reference belonging to the school, and who are accustomed to weekly visits to the public library, under the escort of a teacher, soon acquire intelligent skill in availing themselves of the help of books, and gain a method of reading and investigation that will insure lifelong progress in the work of self-culture.

If the public library is largely dependent on the public school for its usefulness to the community, so, on the other hand, is the school largely dependent for the performance of its full mission upon the work of the public library. The large body of the world's knowledge and wisdom is shut up in books. A library is a vast treasure-house of information. Into it are gathered the results of ages of observation and thought. Whoever would be truly wise must be a reader of books. One of the chief functions of a schoolmaster is to foster a thirst for learning and to

initiate his students into the proper use of a library. Without this his work as a teacher is only partially done.

Very much of the work done in the schoolroom has a tendency to disgust pupils with books by setting before them the mastery of the text as the chief business of life; thus study becomes a drudgery, a task, a burden, which at the earliest opportunity is abandoned. Study should be made interesting and school work a delight by bringing it into such relations with comprehensive reading as to show that all school exercises facilitate the intelligent use of books. The public library with its treasures should stand as a goal toward which each courser in the school race is bending.

Especially does the library lend its generous aid in preventing narrowness of view, pettiness of attainment, bigotry of opinion, and the insufferable conceit which are the possible growths of the hotbed of the schoolroom. The untrained reader may have breadth without depth, the unread student may have intensity without either depth or breadth. Neither has symmetry. Thorough training in the school, supplemented by a wise and generous use of the public library, tends to give depth, breadth, and catholicity. The school trains, the library enriches.

The public library may be especially helpful to the school by the invaluable aid it can render to advanced students in the preparation of essays. The librarian, by furnishing them copious references, puts them in the way of ascertaining the best things that have

already been said on the topics they propose to discuss.

In every public library there should be a department devoted to pedagogical literature. In no period of our history has there been such a demand among teachers and school officers for this class of books. It is one of the most encouraging signs of the times; and to foster the movement, deepening and directing it, is an urgent duty of the hour. In what better way can this be done than by setting apart in every public library an alcove for such publications? Such a collection of books would develop among teachers a professional spirit and would give to the reading public a more definite knowledge of the ideal of culture toward which the more aggressive teachers are aiming.

XII.

TRAINING FOR FREEDOM.

As love is inflamed only by love, as thought is fired only by thought, so freedom alone can kindle freedom.

W. N. HAILMAN.

BEAR constantly in mind the truth that the aim of your discipline should be to produce a self-governing being; not to produce a being to be governed by others.

HERBERT SPENCER.

As the mind grows, the tone of authority in the teacher must gradually relax and justify itself by an appeal to the intelligence and moral sense of the pupil.

J. D. MORELL.

FROM simply commanding he should proceed to explain the reasons of his commands; from these again to the expression of desires and the manifestations of a generous confidence; and from these to the frequent option and discretion of the child, preparatory to the moment of giving him entirely into his own hands.

DR. HARRIS

XII.

TRAINING FOR FREEDOM.

Do not train boys to learning by force and harshness. — PLATO.

IT is apparent to every observer that the discipline in our schools is much milder now than formerly. Fifty years ago corporal punishment was both by far more frequent and more severe than at the present time. The rod as an instrument of discipline is fast disappearing, and in many places is either absolutely forbidden by law or totally abolished by public opinion. There are fewer rules and regulations, a more frequent appeal to reason and persuasion rather than to fear of punishment, pupils are treated more as equals and less as subordinates, greater freedom is allowed them in sports, studies, and life, and in many cases they are admitted to a share in the government of the school and college.

This relaxation of discipline may be regarded as a lowering of the standard, a yielding to a weak *laissez faire* spirit that underestimates the value of law and the merit of obedience and unduly exalts the individual. By some it is looked upon as a sure sign of the degeneracy of the times and as ominous of future disaster to the Republic. It is supposed to result either from indifference, negligence, weakness,

or from false views of law and government entertained by teachers. The remedy for this state of things is supposed by those who entertain this view to lie in a return to former methods. Greater stress is to be laid upon the majesty of law, the dignity of the master, the sin of disobedience, and the merit there is in unhesitating, prompt submission to rightful authority. It is pointed out that every government must be a government of law, and that obedience is not only a cardinal virtue but a prime condition of the continuance of a republican government. That children at school and boys in college are to be taught habits of obedience and that a failure to do this imperils the foundations of society itself.

This view of the situation has an element of truth in it and challenges serious thought. If it is correct we are in danger. Our liberties are in jeopardy. We should make haste to institute a reform in our schools with respect to discipline.

But there is another view of the matter. This mildness of discipline is a sign of progress, not of retrogression. It is a symptom of health, not of disease; an omen of good, not of evil.

The fundamental principle that underlies our system of government is personal liberty. We are a "government of the people, by the people, and for the people." This accepted axiom in our political philosophy must of necessity condition all our thinking on political and social subjects. We must either deny this premise or accept all that is implied in it. The enthronement of the people, the many, uncrowns

the king, the despot. In exalting the many to supreme authority we lift up the individual. The man takes the place of the ruler. With the banishment of kings goes all the pageantry of the kingdom. The great procession of crowned heads, lords, and ladies at the Queen's Jubilee was an anachronism even in royal England. It would be impossible and absurd in America, at least in any more serious form than as one of Barnum's pageants. We cannot teach Americans to bow the knee to mere authority, however venerable and imposing. The humblest American regards himself, and rightly, as the peer in real dignity of any monarch that wears a crown. He too is a ruler, a veritable sovereign.

All of our institutions are modified and controlled by this all-powerful, ever-present spirit of freedom. We recognize no caste, no aristocracy, no classes. All are on a political level. The highest office is open to the lowest person if he will fit himself for it. The ballot is free. Every man's home is his castle. Freedom is his heritage. Liberty is not a privilege but a right. Any unnecessary restriction of the individual not called for by the good of the many is a usurpation, a crime. These notions, embodied in our Declaration of Independence, wrought into our Constitution, woven into our laws, inculcated from the pulpit, on the rostrum, at the fireside, permeate our literature, penetrate every social institution, and find their way into every schoolroom. The great body of our schoolmasters, native and "to the manner born," have themselves been educated in this

philosophy and can no more escape its influence than they can change their character.

A petty officer trained at West Point — the only unrepublican institution remaining since slavery disappeared — may play the lordling over his helpless subjects, and may make much of mere authority, but the teacher trained in an American home and in our high and normal schools has little conception of what authority means apart from the highest consideration for the weal of the governed. Our political philosophy necessitates a milder discipline in family and school to correspond with the milder rule of the State. The nearer the government approaches to an autonomy, the nearer the individual approaches perfect freedom, the more liberal must be all the institutions under which he lives.

The great work set for the schools of America is the preparation of the rising generation for citizenship in a free republic. They are to take their places as freemen, exercise the privilege of voting, and become at once law-abiding subjects and intelligent lawmakers. What is the best preparation for such a life? Does it demand greater rigor in school discipline or greater liberty? Should the teacher emphasize the idea of authority or the idea of freedom? Of course there must be authority in the family, the school, and in the State. And children are to be instructed in the duty and held to the practice of obedience. Wilful disobedience to law at school, disregard of rightful authority at home, are to be punished, together with crime, disloyalty, and treason

against the State. Lawlessness, anarchy, and mob violence are to be held up in their true light as not only hostile to the State, subversive of established order, hurtful to society, but also as inimical to the best interests of the individual. Liberty is not license. Liberty is only self-imposed law. The highest conception of freedom is the action of a divine Being who knows no limitation ssave those that are self-imposed. But these restrictions are real. God cannot lie. The Judge of all the earth must do right. He is free because his actions originate in self. He is a law to himself, but he is law. Necessarily there can be but one absolutely free Being in the universe. All others must be subject. Yet the highest conception of moral life is freedom, where all action is self-originated. Enlightened reason, sensitive conscience, and an upright will are the three great factors in the moral life that give dignity to action and ennoblement to the actor. These are the man. When reason recognizes truth, conscience urges to duty, and the will executes the right for its own sake, the man is free, is noble, is divine. In so far as he obeys law from low motives or from compulsion he is no longer free. Compulsory acts are not virtuous acts. Virtue is voluntary conformity to right.

A child that grows up under subjection to authority, doing from day to day simply what is required and because it is required, judging himself and being judged by others by the standard of conformity to statute law, obedience to authority, is not a free

being, does not enjoy liberty, and fails utterly of preparation for citizenship in a free State. He may be harmless, innocent, peaceable, law-abiding, up right, a good subject, but he is not necessarily a good citizen, much less a good man. To be a good citizen, a useful member of a free society, one must have on all matters of moral relations to his fellowmen an ethical code in the life : he must not obey the law but live it. To become fitted for this exalted state the child must early be trained to govern his own actions, to set bounds to his own passions and desires, to subject himself to reason's sway. The only discipline that fits for freedom is liberty.

The trouble with most parents and teachers is that they govern too much and train too little. Despotism breeds lawlessness. The child overgoverned at home rushes into wild excesses abroad. A people ruled with a rod of iron rebel. Pharaoh's sceptre is broken by Moses' rod. Nihilism is the outgrowth of absolutism. The evils that threaten American society are exotics transplanted from the lands where bayonets rule.

If freedom is man's normal state, he must early be prepared for it by being treated as a free being. It is a serious misconception of human nature to suppose that the child is not fit for freedom till he arrives at maturity. Even in infancy there are indications of the power of self-control. The babe soon learns to suppress his cries and to control his temper. The little child avoids danger, regulates his sports, forms his own plans, and executes his own designs.

He can easily be taught not only to recognize the reasonableness of the requirements made of him when presented to him, but to discern it for himself. He learns to reason and to govern himself by reason. A school may be largely self-governed and well governed. It is true that children are ignorant and weak, and have besides an element of self-will, caprice, viciousness, that needs education and support and restraint. There must be, in every school, checks, a veto-power. Everywhere in society there are these limitations of the individual. Even majorities must respect the written constitution as well as the rights of the minority. In all free states there is a senate set over against an assembly. There is an executive armed with a veto-power, and over all a court to guard the constitution from infraction by the state itself.

So there should be in the school the recognized necessity of a body empowered to check, control, or modify the rule of the mass of students when called for. They must not be left to themselves. But it must be a restriction of mere authority, arbitrary power only when reason fails. The occasion that calls for its exercise must be extraordinary. The students of even lower-grade schools are competent to govern themselves in a large degree and should be encouraged to do so.

True, there will be mistakes, but the evil resulting from mistakes may furnish occasions for instruction. Men learn from their mistakes: why should not children? The discipline of consequences is a recog-

nized element in God's education of the race. To feel the force of their own mistakes, to search out the far-reaching consequences of their own actions, to devise remedial measures, to sedulously avoid a repetition of them, is itself an invaluable training, an indispensable experience in preparation for life's active duties. Of course it is not intended to leave children or pupils of any age to rush into serious dangers and to suffer the dire results of ignorance and folly from which the experience and authority of their parents or teachers should have saved them. But suffering minor penalties, flowing naturally out of violated law, is often a sure means of leading the offender to a wise precaution that saves him from greater evils.

There is a vast difference between learning and wisdom. A fool may be learned, or at least a learned man may be a fool. It is one thing to learn geometry by studying the demonstrations of Euclid. It is quite another and far nobler thing to learn to geometrize by inventing one's theorems and demonstrations. So too one may be a master in ethics so far as knowledge goes, but a weakling in the practice of virtue. It is not sufficient that we practise what we have learned from books and masters. There is a moral fibre, a sturdy, manly virtue, developed by grappling with practical moral problems, overcoming temptations, resisting evil, evolving principles out of our experiences. An ethical code born of life may lack in scientific completeness, but it is more likely to be forceful in guiding conduct than any set of memorized precepts.

Pupils are to be governed. They are to be taught moral precepts. They are not by any means to be left to themselves. But what is insisted on most strenuously is that they are to be trained to think for themselves on moral subjects and to regulate their conduct by the results of their own thinking. They must be thrown gradually and wisely upon themselves. The appeal must be made more and more to conscience and reason and less and less to fear and power.

This does not prevent but rather necessitates the clearest and most explicit inculcation of wise precepts and the exposition of fundamental ideas of right and wrong, justice, equity, loyalty, truthfulness, fidelity, and all the civic and social virtues. The highest ideal is ever to be presented to the young as the goal of their endeavor. This ideal becoming gradually clearer in outline, more complete in detail, at length takes its place in the imagination as an abiding presence, a silent, forceful mentor. The child trained at home and in school to judge his own actions by this ideal standard has an inward prompting toward the right under all circumstances and in all places. This is a safeguard in temptation, an encouragement in trial, a nemesis in wrong, and a reward in victory.

The day of blind submission to human authority is fast passing away. Absolutism is a bygone. In philosophy, religion, science, and in politics the same great phenomenon is seen of an awakening consciousness of freedom. The old state of things,

despots and dungeons, inquisitors and inquisitions, masters and floggings, are giving way to written constitutions and the ballot, the open Bible and private judgment, and the teacher ruling by love. We cannot restore the old régime. Once gone it is gone forever. To prepare our children to live and act well their part in this modern age in our country, we must educate them for freedom by training them in freedom's ways. Education takes on new significance, involves new methods, necessitates a new spirit, when it sets for itself the high and holy task of training a whole vast generation of free men and women who shall be adequate for the duties and prepared for the privileges of lives of rational, social, political, religious freedom.

XIII.

METHODOLOGY.

THE study of methods of instruction constitutes one of the most important divisions of educational science.

GABRIEL COMPAYRÉ.

NOTHING so much clears a learner's way, helps him so much on in it, and makes him go easy and so far in any inquiry as a good method.

JOHN LOCKE.

LEARNING teacheth more in one year than experience in twenty, and learning teacheth safely, when experience maketh more miserable than wise. He hazardeth sore that waxeth wise by experience.

ROGER ASCHAM.

FORMAL logic as the exposition of the structure of mind, the form of its functions, is the most important part of psychology, and a key to all the unconscious activities of the mind.

W. T. HARRIS.

XIII.

METHODOLOGY.

Method will teach you to win time. — GOETHE.

THE highest outcome of instruction is not knowledge only, but power, and particularly the power to think. One needs to know not merely facts, but facts in their relation to other facts; not only that a thing is so, but also why it is so. It is not enough that one should know a science: he needs to be able to construct a science. To learn to philosophize is more than learning philosophy. Instruction that merely imparts information falls short of awakening power.

In order that teaching may stimulate thought-power it must result from thought-power. The pupil thinks as the master thinks; he unconsciously imitates the master's method. If the master teaches without a plan, the pupil's knowledge will be formless and his mind chaotic. If the teacher follows an intelligent system, sets before himself each day a definite purpose, and arranges his material with nice discrimination, according to a plan, adapting means to ends, the pupil's mind will be exercised in thinking correctly and will take on a logical habit.

As a preparation for this kind of work the would-be teacher should study not simply formal logic as

a science of thinking, but he should study also with greatest care methodology, or the science of instruction. This is a broad subject and can be set forth here only in outline.

There are certain great general principles underlying the work of instruction that are followed more or less closely by every successful teacher. He need not necessarily be conscious of them any more than the successful writer must be distinctly conscious of the principles of rhetoric, or the orator of the principles of elocution. Rhetoric is a systematic statement of the laws of good writing, and logic of the laws of thought. So methodology is the orderly arrangement of the principles of good teaching. Practice precedes theory. Good speakers antedate treatises on elocution; men reasoned soundly long before the science of logic took form; and great teachers taught long and well before any attempt was made to reduce to systematic statement the principles that guided them.

Rhetoric is a guide to successful composition, logic abridges the labor of thinking, and the study of methodology may prove most helpful to him who aspires to succeed in teaching. It is no argument against the study of rhetoric and logic to say that men ignorant of their rules have been successful writers and speakers. Genius is a law to itself. Men of rare insight into truth come unaided to a knowledge of underlying principles which need to be formulated, illustrated, and taught to the average mortal.

Method should be distinguished from methods. The general principles of teaching are common to instruction in any branch of knowledge, differing only in application according to the nature of the subject taught. There is a method of teaching geography, a method of teaching arithmetic, a method of teaching grammar, and a method of teaching every branch of human knowledge. To attain the highest success in any field of instruction, one must needs study method in its relation to that particular branch of science that he wishes to teach.

But one who studies method only in connection with some particular branch of instruction is liable to be narrow and one-sided. One who tries to learn painting by studying Raphael becomes a copyist, as pointed out by Sir Joshua Reynolds. While one who studies the principles of painting as illustrated by Raphael and the other great artists may himself become an artist, an original creator. One who should study rhetoric by the examination and imitation of the writings of Carlyle only would never become a master of style.

One who studies methods, and not method, is liable to mistake devices for principles, and cleverness for science. He is especially liable to fall into the error of supposing that there is only one method of teaching a subject, and that the particular one which he has learned. The criticism of pedantry often brought against normal students, and of charlatanism against normal instruction, finds its

explanation at times in the failure to study methodology and in the undue prominence given to methods.

As preliminary to the study of methodology there should be a course in logic. In every act of teaching there are two parties, the teacher and the taught, the instructor and the pupil. The teacher cannot teach except in so far as the pupil learns. Knowledge-giving is conditioned on knowledge-getting. The one cannot go on without the other. He who teaches, therefore, must first of all have regard to the laws according to which one learns. If he violates or ignores these laws, he is doomed to failure. Logic in its broad sense has to do with acquisition, and one who teaches should have an explicit knowledge of those processes of mind which are engaged in attaining knowledge. Without attempting a full exposition of the matter here, let it suffice to indicate some of the more prominent topics that constitute a sort of presupposition to method.

The sources of knowledge are either observation, consciousness, intuition, testimony, authority, or thinking. These should be studied, and the peculiar function of each clearly discriminated.

Especially important is a knowledge of the processes of analysis, comparison, judgment, inference, induction, generalization, classification, deduction, verification, and proof. Many a young teacher undertakes the important task of instructing young minds without ever having spent an hour

in the study of these processes. Logic is not ordinarily taught in high schools, from which issue forth year by year so many teachers, and even in normal schools the subject is likely to be overlooked.

Closely allied to these logical processes are others that belong rather to imparting instruction than to acquiring knowledge. Among these are: definition, description, narration, illustration, arrangement. Each of these processes has an order and laws of its own. They need not be set forth here. They are of the very essence of instruction. No progress can be made without them. Definition may be faulty or even false; description, inaccurate; narration, obscure; illustration, *non-luminous;* and arrangement, without a plan. Under such circumstances teaching must be weak and its results very unsatisfactory.

Before entering upon the work of giving instruction on any subject to a class of pupils at school, the teacher needs to consider three things.

First. The analysis of the subject. Every science has its logical articulation and can be separated into its distinct parts. Most subjects can be presented under a very few great topics with a greater number of sub-topics. In thinking, there are two great fundamental processes, discrimination and assimilation. In arithmetic there are two prime operations, combining and separating. All the animals of the world may be classed in five great groups. Each topic can be subdivided into its

constituent parts, and these into their parts or elements. It is not until this complete analysis of the subject, following the lines of the organic structure or logical constitution of the matter, has been finished that the teacher is prepared to enter upon the work of exposition. He cannot intelligently set forth to others what is not clearly grasped by himself.

Method seeks to determine those recognized principles of division by whose aid any subject may be resolved into its topics. Nothing is more serviceable to the young teacher than this preliminary survey of arithmetic, grammar, geography, and other common-school studies in their topics, or outlines. The logic of the science is studied apart from the multitude of facts which it embraces.

Second. When this preliminary survey is completed, the next great question for the teacher to determine is the order of presentation of the topics.

Analysis and synthesis. It is a much disputed question what the nature, function, value, and relation to each other of these two processes are in teaching. By some they are regarded as the essential elements in method, while others would discard them entirely. It is safe to say that every subject presented to the child, except primitive ideas, such as hardness, smoothness, straight line, needs to be analyzed and his attention must be directed successively to its parts, or qualities. A sentence is made up of words; words, of letters; letters, of parts. The earth comprises land and water. A

metal has lustre, specific gravity, and other qualities. Government comprises three departments, legislative, judicial, and executive. In all subjects the instructor must resort to analysis, and must lead his pupils by its means from the contemplation of a whole to its parts. In cases of review, and in presenting new subjects to minds mature enough to follow a process of logical division, the analytic process saves time and labor, while in some subjects, as in geometry, for example, the process is necessarily and almost wholly analytical.

In many cases it is better, particularly with young pupils, to begin synthetically by presenting one thing, or part, at a time, and, by joining part to part, lead to successive generalizations until the mind grasps the subject as a whole. Elementary geography should be so taught. History, in its earlier stages. Natural history and the physical sciences should always be taught to beginners synthetically.

In teaching synthetically, resort must frequently be had to analysis in making clear difficult points that arise, and in reviewing the work accomplished at different stages of progress.

The two processes are parts of one operation, and can seldom be wholly separated. They explain each other.

Modern methods of instruction emphasize the importance of the synthetic process of presenting in the introduction of a subject facts and concrete instances rather than definitions; processes rather than rules; induction rather than deduction.

Nothing is clearer than the necessity of going from the concrete, that which appeals to the senses, to the abstract. Object-teaching and objective teaching play an important rôle in all training of the young, and in the introduction of new subjects in most stages of teaching. Distinctness, clearness, and vividness are often unattainable withou the use of objects, models, or pictures. As soon as possible objects should be discarded lest they foster an indolent habit of thinking.

Scarcely less obvious is the law of proceeding from the known to the unknown. Knowledge begins in sense discrimination and individual experiences of the qualities of matter. It continues by constant assimilation of new experiences to the old. Every new experience is compared with the old and grasped by its resemblance or its contrast. In number a child first learns to count; then adding is another way of counting; multiplying, a short way of adding; squaring, a distinct way of multiplying. Seeking to connect what is to be taught with what has already been learned is the most economic way of increasing the stock of knowledge.

Ideas and words. No absolute law can be laid down further than to say that in early childhood usually the idea should first be awakened and then the name given, but even here are many exceptions.

The laws of dependence, of cause and effect, of sequence in time, of contiguity, of contrast, of variety, and of passing from the simple to the complex, all claim notice in any discussion of method.

Third. Having settled upon what topics he will present and the order of their presentation, several other matters will claim attention, such as the following: —

Oral teaching. What are its limits, its advantages, disadvantages, and condition?

Textbooks. How far shall the student be required to master the exact words of the book? How shall the book be supplemented?

Assignment of lessons. How shall lessons be assigned, and how much? What explanations or hints and suggestions shall be given?

Preparation of lessons. What help shall the student receive, and in what way?

The recitation. How shall this be conducted, by question and answer or topically?

Reviews, tests, examinations, marking, ranking, all have a bearing upon successful instruction.

Second to no other in the whole subject of instruction is that of the motives that should be appealed to and the best means of arousing them.

Methodology includes also an investigation into the educational values absolute and relative of different branches of learning.

It will be seen that these elements of method can be studied aside from the teaching of any particular branch of instruction, and they are involved more or less in all teaching.

The study of methods in any special branches will be greatly facilitated and be lifted upon a higher philosophical plane, if it follows as an application of

these general elements according to the peculiarities of the subject to be taught. Methodology may be studied after students have investigated the method of teaching one subject.

A comprehensive study of methodology as here outlined, until the fundamental principles are clearly grasped and their varied application in teaching the several branches of science familiarly understood, will make the teacher's work scientific instead of empirical. It will greatly facilitate it, enabling him to accomplish not only what could not otherwise be done, but to reach his ends quickly, surely, and easily. Such preparation will enable him, while imparting knowledge, to guide the minds of his pupils so that they will be led to use all their powers appropriately, actively, efficiently, so as both to assimilate the knowledge offered and also to grow in ability to observe and to think. Thus taught, they may become self-reliant, aggressive, profound, practical reasoners. Knowledge is transmuted into wisdom and instruction issues in power.

XIV.

THE MAN AND HIS METHOD.

TEACHING is a lifelong learning of how to deal with human minds.

EDWARD THRING.

IN education every teacher must have some mode of exhibiting the notions he has of his art, and this mode is his method.

JOSEPH PAYNE.

MACHINE methods are necessary wherever machine teachers are found.

JOHN HANCOCK.

HE only can teach who looks down upon the elements of his department from the heights of broad and solid attainment.

M. B. ANDERSON.

THE health and progress of every great science, such as education, depend upon continual difference, upon new ideas, and experiments carried out to give effect to such ideas, upon the never-ending struggle between the many different forms and methods, each to excel the other. It cannot be too often repeated that uniformity means arrest of growth and consequent decay; diversity means life, growth, and adaptation without limit.

'A PROTEST," *The Nineteenth Century, November, 1888.*

XIV.

THE MAN AND HIS METHOD.

The true teacher teaches himself: that is, he impresses his own character, his own intellectual and moral habits, on his pupils.

— JOSEPH ALDEN.

STANDING one day near the Mansion House in London, my attention was attracted by a somewhat extraordinary turnout. Addressing a policeman at hand, I inquired, "Whose carriage is that?" "That," said he, with severe and impressive dignity, "is the Lord Mayor *and* his carriage."

What struck me was the magnificence of the equipage, the gilded wagon, the prancing horses, the liveried attendants; while that which impressed the sturdy Briton was the majesty of him who rode within. I have reflected upon the incident many times since, and have learned from it some useful lessons.

Much is said in our day, in reference to teaching, about the importance of method. Schools have been founded to give instruction in method. It has seemed to me, in some instances certainly, that men had an exaggerated idea as to the importance of method; that they had given such exclusive attention to the method as to overlook the man.

The man is greater than his method. The power

of every true teacher is in himself, his character, his attainments, his spirit, his personality. A robust, vigorous man, with high aims and enthusiastic devotion to his work, deeply in love with any great subject in which he has steeped his own soul, will awaken something of his own zeal in the minds of his pupils, kindle within them a love of learning, arouse their dormant energies, call into exercise their awakening faculties, impart to them of his own knowledge, and incite them to independent research. His method is simply his way of doing this. He originates his method. Socrates, with his devout love of truth, his unfeigned humility, his keen detection of the shallowness of men's pretensions, had a way of bringing them by a series of questions to a consciousness of their own ignorance and revealing to them the necessity of a reëxamination of the very foundations of their pretended knowledge. Not the Socratic method, but the man Socrates, was the mighty power in Athens. A public instructor who thinks to become great merely by the use of the Socratic method of questioning adopts the policy of the ass which donned the lion's skin.

A teacher may be great in spite of his method. The methods of Michael Angelo were faulty, and it is not difficult for a critic to point out defects in his work. Men of less genius attempting to do as he did would meet only with failure; nevertheless, Michael Angelo was a great artist, his works are imperishable, his name will be as enduring as art itself. The magnificence of his conceptions, though

imperfectly embodied, lent a new majesty to architecture, painting, and sculpture, and lovers of art go in throngs to the Sistine Chapel, and to view his matchless statue of Moses. The method of Pestalozzi, crude and faulty though it was, could not entirely prevent the achievement of at least partial success in his philanthropic schemes. Carlyle was a great writer in spite of his barbarous English. In our schools to-day may be found numerous teachers who, notwithstanding the most faulty methods, are accomplishing great results, not only in imparting much useful instruction, but in awakening mind, developing character, and inciting to noble living.

Nevertheless, every teacher who aspires to the highest excellence should be master of method. His task is one of infinite difficulty, and calls not only for character of rare nobility, talents of high order, and liberal learning, but also for the greatest skill in the adjustment of means to ends. Method is applied philosophy. A teacher who achieves success by virtue of the intensity of his personality, in spite of the faultiness of his method, might be still more successful by greater regard to the means used in his endeavors. Elocution is not oratory: it is too often mere empty sound. Peter the Hermit in his beggar's garb moved all Europe by his uncouth speech; and yet Demosthenes strove with masterly will to overcome defects and achieve a style and manner which should serve as a medium for the conveyance of his own great thoughts to the minds and hearts of his countrymen, and incite them to deeds of lofty valor.

The studied arts in the use of voice, gesture, manner, lend a charm and potency even to "words that breathe and thoughts that burn." No teacher can safely neglect the added power imparted by a correct method.

Teachers should strive constantly to attain new degrees of excellence in method. Perfection ever eludes even the most ambitious. The greatest master is yet a tyro. There is no "The Method." Method is the outgrowth of philosophy, and must adjust itself to the laws of mind and to the exigencies of science. What are the laws of mind? What constitutes education? What is the educational value of each of the sciences? are some of the questions that remain to vex the educator. Progressive inquiry is possible in each direction, and each successive attainment admits, if it does not demand, a modification in method. Method must likewise recognize the individuality of the pupil. That which may be most potent with one may prove utterly impotent with another. Method easily degenerates into routine — dead formalism. Great reforms are often nothing more than desperate endeavors to break away from this lifeless formality. Iconoclasm becomes a virtue, and empiricism meritorious. Erasmus and Ulrich von Hutten were the forerunners of those who reconstructed the world's religious teaching. Every teacher should himself be a perpetual reformer.

The man and his method exert a reciprocal influence upon each other. A growing manhood,

characterized by loftier aims, wider research, greater attainments, deepened experience, manifests itself in improved methods of work. On the other hand the increased skill secures better results, leads to larger endeavors and broader opportunities, kindles new enthusiasm, and begets enlargement of soul.

XV.

METHOD IN QUESTIONING.

THE art of asking questions is not a simple art.

E. E. WHITE.

SOCRATES spent his life in teaching, and in teaching in an original method, which has preserved his name. He had the genius of interrogation. To question all whom he met, either at the gymnasium or in the streets; to question the sophists in order to convince them of their errors and to confound their arrogance, and presumptious young men in order to teach them the truth of which they were ignorant; to question great and small, statesmen and masons, now Pericles and now a shopkeeper; to question always and everywhere, in order to compel every one to form clear ideas; such was the constant occupation and passion of his life.

GABRIEL COMPAYRE.

XV.

METHOD IN QUESTIONING.

One of the most important means of stimulating thought is questioning. — F. B. PALMER.

IN all the earlier stages of education the chief business of the teacher is to arouse and direct the activity of the pupil. All mental development and growth in knowledge is conditioned upon this activity. The pupil must desire to know, he must observe and think for himself. No receptivity, however great, suffices. Indeed, receptivity is active. The mind must be on the alert, eager for truth, rejoicing in action. Even when the teacher instructs, pours into the mind facts and truths, it is only as the pupil lays hold upon these facts and assimilates them by thought that they are really communicated.

Most children are endowed with a fair degree of native energy that manifests itself, among other ways, in a curiosity that leads them to investigate nature and to seek information from their companions. When properly nourished, this curiosity is sufficient to insure to them a full development of their powers and a large acquisition of knowledge.

Too often, however, by neglect or by false methods, this divine gift of curiosity is stifled. A recent writer, alluding to his seventeen years'

experience as a professor in one of our oldest colleges, says: "I am more and more impressed, and often sadly impressed, with the failure on the part of college students to manifest that intellectual curiosity, and to put themselves in that mental attitude, that shall make their studies truly educating to them."

Any system of education which consists wholly or chiefly, or largely even, in simply requiring students to commit to memory certain lessons, whether truths of history, rules of grammar, or facts of science, tends to stupefy the mind and to crush out that curiosity without which no satisfactory progress is possible. Any plan of classical study that wholly or chiefly confines the student's mind to the words of the text, their literal meaning and grammatical structure, is essentially vicious. The text of the classical author should be made the occasion of a wide range of thinking on the part of the student. There should be questions from the teacher as to geography, history, philosophy, religion, etc., suggested by the text; questions calling for an expression of opinion as to the sentiments advanced, judgment as to the wisdom of things done, comparison of men, cities, events, etc.; in short, questions that serve to put the mind of the American student of a classical author in the same state, as far as possible, as that of a student contemporary with the author himself.

Questions are often framed simply with a view to test the memory. The examiner is satisfied when

the student by his answers shows that he has stored away, subject to call, the various fragments of knowledge set him for lessons. It is important, of course, that the memory shall do its work. It is an invaluable power. Like the ammunition train in an army, it needs to be well supplied and always at hand. The bravest soldiers and most skilful gunners are largely dependent upon its proximity and fulness for effective service. But after all it is merely a supply train. Ammunition is only a dead weight and an encumbrance unless there is courage, wisdom, skill, and efficiency in its use. Memoriter recitation is hurtful, rather than helpful, just in proportion as it is accepted as a substitute for earnest intellectual effort, involving the putting forth of all our powers. One hour of original thinking is worth a week of memoriter recitation.

The mind is stimulated to action by the presence of real things in nature and art. The natural phenomena appeal strongly to the child's curiosity; but the mystery of nature is too profound, the difficulty of understanding its laws is too great, for the unaided student. The child of nature is always a child. No man or generation of men left to themselves would or could make much progress in the conquest of the secrets of the universe. It is the accumulated knowledge and wisdom of the ages, increased little by little and taught by one generation to another, that is man's heritage. The teacher initiates the student into these mysteries, gives him the key to this great treasure-house, enthrones him

as ruler over nature's great forces, and teaches him how to subject them to his own uses.

To leave him to his unaided efforts is to doom him to failure and to consign him to despair. To attempt to lay upon him, ready made, the accumulations of science and the formulas of philosophy is to crush him with riches. The teacher is to put him into right relations with the world about him and that greater world within him, and by hint, suggestion, and question lead him to put forth all his powers of observation, introspection, and thought, until he comes to self-conscious freedom and to the mastery of his surroundings.

The chief agent in the hands of the teacher for this great work is the question. Not the lifeless interrogatory printed at the bottom of the page, a sort of birdtrack on the rock to show where a living creature had once stood in some former age; not a mere formal quest after the contents of the memory, like a pail dipped into a cistern; but a living question designed to stimulate inquiry, provoke thought, arouse the imagination, and to lead the mind to exert its best energies in the endeavor to solve for itself life's riddles. Thus led into face-to-face contact with things which he must observe for himself as though his eye had first looked upon them; into an investigation of nature's laws and forces, which under helpful guidance he is to ascertain and formulate for himself as though no science had yet been begun; into communion with himself, observing, analyzing, classifying, and philosophizing upon

his own powers; into a philosophic study of man in society and history, the student follows in the footsteps of the race as an investigator, a discoverer, a philosopher, with this difference, that rightly guided he alone does more in a single lifetime to compel from nature her secrets than all men in all previous time have done.

The questions that can be asked, and the answers to which constitute the whole body of knowledge, whether science or philosophy, can be reduced to a very few classes. It is possible for a wise teacher in a few years to so question a pupil that all his powers shall be aroused, all the sources of information be opened to him and at his command, and so that he shall possess a method of inquiry himself which renders his progress swift, certain, and satisfactory.

Ten categories will, perhaps, exhaust the list. They are: What? Of what kind? How many? How much? Who? Where? When? How? Why? What then? One who is accustomed to seek an answer to all of these inquiries, to follow "the connection and dependence of ideas till the mind is brought to the source on which it bottoms," is already, in a very large sense, an educated person. He alone is a good teacher who is, not like Peter Lombard, a "master of sentences," but, like Socrates, a master of questions.

Let us look, simply by way of illustration, at the significance and compass of these questions. 1. What? One of the primary and fundamental acts

in the process of thinking is that of discrimination, the separation of the object of thought from all else; for as soon as the mind gives attention to a sensation, it must localize it as a sensation of sight, of hearing, etc., and then must refer it to some definite object as its source or occasion. Every act of perception is an act of discrimination, of mental concentration. Every object of thought has its own characteristics, its individuality, and can be known to the observer only by an effort. Suppose a child is learning to read, and that there is placed before it the word "cat." The teacher may pronounce the word and the child echo it. This process, repeated often enough, will serve to fix the word in a sort of mechanical way in his mind, and to form a loose association between its written form, spoken sound, and its meaning; but it is only when the child has really directed its mental energies upon the word, observed its form and sound, discriminated it from other words, noted its peculiarities, that he actually learns it. The mere name is the least part; the particular word, as unlike all other words and with a character all its own, is another matter. So too in learning about a veritable cat the child needs to see and handle, to distinguish, observe, and compare, until it has a definite, clear, familiar acquaintance with it, so that when he thinks "cat" the idea has distinct contents. The same process of mind which the child uses in making his first acquaintance with the elements of learning must be used by the trained scientist or philosopher in pushing his researches into the farthest boundaries of inquiry.

The question What? calls not only for observation, discrimination, analysis, comparison, but for naming, defining, and classifying. The misapplication of names is a glaring fault with most people, quite as characteristic of many so-called educated people as of the illiterate, and results largely from the habit of telling to children the names of objects, without requiring from them any exercise of thought in carefully discriminating the precise thing named from all other things and the associating with it the exact name appropriate to it.

To require of students careful definitions of all new terms used is a valuable aid in giving definiteness to their ideas. The definitions learned from books may or may not be helpful; but the definitions made by the pupil, the boundary which he himself draws around the idea represented by the word he uses, necessitates thought and gives definiteness of apprehension.

Defining leads to classifying. The classification which the student is led to make for himself in answer to the teacher's What is it? provokes a higher order of thinking than is involved in observing or naming. At first he will hesitate and blunder, and will need help — help, however, which is usually best given, not by direct information, but by other questions.

2. Closely akin to the question What? is the question Of what kind? This calls for a description of the object: whether material or spiritual; animal, vegetable, or mineral; homogeneous or organized.

It calls for parts, qualities, and properties. The teacher, by proper questions, may lead the student to put himself into all possible relations with an object, that he may describe it as it appears — if a material thing — to eye, ear, touch, etc. Every object of thought can be viewed with reference to certain characteristic phases. A mineral has form, lustre, hardness, specific gravity, etc.; a bird has size, parts, plumage, habits, etc.; a man has age, size, features, complexion, carriage, etc. Country has latitude, longitude, altitude, boundary, surface, slope, soil, climate, products, etc.

Observation, which lies at the basis of all knowledge getting and conditions all intellectual growth, must be the pupil's own act. It is best called into exercise not by telling him what some one else has seen, nor what to see, but by repeated inquiries as to what he himself sees, has seen, or may see. Thus directed, he will form a habit of careful, accurate, exhaustive, and comprehensive observation, and of clear, concise, complete description. At some stages of culture, and in reference to some things, the habit of requiring the pupil to represent the object of his thought by a drawing on paper, slate, or blackboard is an invaluable aid in securing definiteness of conception. That which can be pictured must first exist clearly in the mind.

It is obvious that the questions What? and Of what kind? call for statements of the nature not only of those objects of thought which are material and appeal to the senses, but also of those objects

which are immaterial; such as the mind and its states and activities as revealed by consciousness, as well as those subtler conceptions of time, space, number, personal identity, etc., that spring up in the mind, not out of observation nor yet out of consciousness, but intuitively.

That is a very shallow view of knowledge and of education which asserts that all our knowledge comes through the senses, and that the mind can only be trained through the activity of the perceptive faculties. The pupil is to be led by questions to seek to give a rational account of the contents of his mind that have not had a sense origin and have no sense relations. "Our age inclines at present to the superstition that man is able, by means of simple sense perception, to attain to a knowledge of the essence of things and thereby dispense with the trouble of thinking."[1]

3. How many? The moment a child distinguishes one thing from another of the same kind, there arises in his mind the idea of number, and, when once awakened, this idea is never lost. It becomes one of the essential forms of the mind's activity according to which it contemplates the world.

The whole philosophy of numbers, their properties, combinations, and relations, should be taught by questions rather than by instruction. The names — which are arbitrary — must be given, the processes may be exhibited, but the rationale of the process must be seen and not told. Nothing, perhaps, is

[1] Rosenkranz.

more characteristic of what may be termed the "new education" than the improved way of teaching mathematics. When the child knows one book, one apple, etc., he is shown two books and asked, How many? One is removed. Now how many? Nothing is told him unless in answer to his own questions, but by incessant questioning he is led to separate and combine and describe the act and result, and thus think his way through the science. Arithmetic thus developed is a valuable mental gymnastic; taught as it often is, it dwarfs and cripples the mind.

4. The question How much? suggests standards of measurement — foot, yard, pound, gallon, etc. The ordinary method of teaching weights and measures is to require pupils to commit the tables to memory, often without their ever having seen a standard of either weight or measure. Such knowledge is of little or no practical worth, and of the least possible value as a means of mental discipline. But when a quantity of matter — beans, water — is given to the pupil, and he is required to determine its quantity by actual measurement in answer to the demand How much? he acquires definite, valuable knowledge and is constrained to mental activity of high disciplinary value. When he is required to estimate the same quantity of matter in terms of different standards of measure, — so many pints, quarts, pecks, litres; so many metres, yards, paces, etc., — the entire subject of reduction, so obscure to many students, may be developed, and thus a habit

of mind established which in after-life is of the utmost value in enabling him to view the same persons, events, or systems of government, philosophy, etc., from different points of view.

5. Who? In the whole range of human study no subject has deeper interest than human beings. We sustain intimate relations to those about us, and individual biography has for us a perennial interest. The question Who? directs the thought of the student to the following points in the biography: (1) Name. (2) Ancestry. (3) Birth: time, place. (4) Education. (5) Career. (6) Death: time, place, circumstances. (7) Estimate of character. A mere memorizing of the facts of biography is of little avail in the work of education; but when the pupil, under direction of the teacher and in answer to his searching questions, is led to think his way to a clear understanding of the facts; to a lively interest in the personality of the individual, an independent judgment of his character and actions, and to make a practical application of the lessons learned to life's problems, biography is at once entertaining, instructive, and quickening. It is invaluable as a training for the judgment. Passing over the question (6) Where? with its suggestions of direction, distance, latitude, longitude, altitude, and the more difficult inquiries into space; and (7) the question When? that brings up so many thoughts of time and its measurement, I pass to (8) the question How? This provokes thought as to the manner, means, or instruments with which any event has been

brought about. Everywhere about us is a vast organism, a most complex scheme of means and ends. What are the adjustments used in that exquisite bit of machinery, the human body? What are the processes in human thought? How do the great forces of light, heat, electricity, generate?

In all stages of education there is imperative need, if any high results are to be reached, that the pupil should be led to independent inquiry; be required to answer questions not in the textbook; to solve problems for whose solution the book gives at most only a hint. To stimulate the mind to invention, whether in designing, in mechanical construction, in arrangement of arguments, or in the elaboration of a scheme of philosophy, is a part of that higher culture so much needed and so little realized.

9 and 10. The questions Why? and What then? seek for reasons, purpose, causes, and effects. The senses give us facts, the reason seeks for philosophy. At a very early stage of the student's education should begin the habit of thinking with a view of discovering those deep thoughts of God which are everywhere embodied in the universe. Man is a rational being, and the goal of culture is rationality. It is a serious defect in mental habit when the mind rests satisfied with a comprehension of mere facts without a comprehension of their relations. Facts, like food, are useful only as they have been assimilated. The possession of facts does not constitute culture. Facts are only the starting-point and not the goal. They are the means of culture. Their

chief value is that of suggesting thought. "The observing man *collects* facts, and the reflecting man *explains* facts." They are indispensable in any scheme of thought, just as stone, wood, and other material things are needed for the embodiment of the architect's ideal of a cathedral; but the thought that plans, uses, and everywhere subordinates the material to its own purposes is greater than the material.

A mind trained to think under the spur of questions finds for every effect a cause; underneath phenomena he sees laws. Facts have their philosophy. The universe is a cosmos. We live under the reign of law; order takes the place of confusion. There is a philosophy of history and a science of life. The goal of study is the ability to philosophize. Philosophy cannot be taught: it must be created. Nothing is true for the mind which it has not thought out. The mind is self-active, must make its own creed, evolve its own philosophy. The universe is to each that which each thinks it to be. Other men's thoughts may help us by way of suggestion or test, or even by provoking a reaction against what we deem error, which enables us to reach conclusions that are more nearly in accordance with the reality of things as we see them.

That teacher does the most for his pupil who by wise questioning stimulates his powers, leads to an inquiry into the facts about him and within him, their nature and relations, draws from him such an exercise of his powers of observation, imagination,

and thinking that he forms an original, independent judgment of things presented to his mind, and elaborates for himself a philosophy.

The philosophy of questioning, then, is this: Questioning is to be used chiefly as a means of awakening interest, directing the attention, arousing curiosity, stimulating thought, suggesting lines of inquiry and sources of information. It is not so much a test of attainment as a stimulant to action. The grade or difficulty of the question must be adapted to the strength of the student, and its character to the peculiarity of his mind. The order of succession of questions will necessarily be suggested partly by the nature of the subject (logical order) and partly by the special power or effort to be evoked (pedagogical order). The real pedagogue — child leader — is the child questioner. To question well is to teach well.

XVI.

METHOD OF TEACHING ARITHMETIC

ARITHMETICAL language is the expression of arithmetical ideas.

EDWARD BROOKS.

WE cannot too strongly impress upon the teacher's mind that each lesson in arithmetic must be at the same time a lesson in language.

E. V. DEGRAFF.

A CHILD'S seeming stupidity in learning arithmetic may, perhaps, be a proof of intelligence and good sense.

MARIA EDGEWORTH.

THE method of introducing each subject is such that the student is led to truth in the path of the original investigator — certainly the most natural and delightful road to the acquisition of knowledge.

W. J. MILNE.

XVI.

METHOD OF TEACHING ARITHMETIC.

The knowledge of number relations adds very much to the child's life. — FRIEDRICH FROEBEL.

ARITHMETIC should be so taught as to secure a high degree of intellectual discipline, awakening the observing powers, stimulating analysis, comparison, judgment, abstraction, generalization, and so as to give to the student practical skill in business computations. It is preëminently a thought study, and only incidentally a memory study. The two chief things to be striven for are accuracy and facility.

The design of this paper is to set forth in brief some of the more salient features of what is believed to be a philosophical method of procedure.

A conception of number — one and other — may be awakened in the mind of a child at a very early age. As soon as he can comprehend such simple questions as, where is your hand? where is your other hand? he is prepared for the request, show me one hand; show me two hands.

Ideas of consecutive numbers should be awakened by the contemplation of groups of objects, such as I, II, III, IIII, IIIII, o, oo, ooo, oooo, ooooo. Sticks, blocks, rings, beads, and other familiar objects grouped in ones, twos, threes, etc., will soon awaken definite conceptions of these simple numbers.

As soon as the idea two, three, etc., is clearly awakened the term should be given to designate the number. The child should be taught to count not by rote one, two, three, etc., but by grouping objects, and applying to each group its proper number name. Counting is primarily grouping. The order of counting should be learned by comparison of one object with two objects, I, II, of two with three, II, III, until he becomes familiar with the idea of regular increase by one — I, II, III, IIII, one and one, two and one, three and one, etc.

When sufficient familiarity has been acquired with the simple ideas one, two, three, as applied to objects, he may be led to perform fundamental operations of combining and separating, adding, multiplying, subtracting, and dividing.

The child should be led to recognize that multiplying is but a short way of adding the same numbers; that division and subtraction are kindred operations, while subtraction is the reverse of addition, and division of multiplication. The "Grube" method of teaching the four fundamental rules simultaneously is philosophical.

The first year in school — from five to six — may be profitably limited in number work to acquainting the little ones with numbers from one to ten.

During this early stage a good deal of collateral knowledge of form, color, size, direction, etc., may be acquired; and besides, some skill in the use of language of numbers.

When the child enters upon a higher stage of a

more extended study of addition, subtraction, multiplication, and division, he should be led to construct his own tables. These tables should then be thoroughly memorized and rendered familiar by extended drill.

The successive steps are, observation, thought, expression, memory, use, involving imagination and reason. Original problems should be required at every stage.

A knowledge of fractions should be based upon division. To separate an apple into two equal parts is to divide by two into halves. To divide by three is to create thirds, etc.

The child should be led to think of an apple, for example, as one whole, two halves, three thirds, four fourths, etc.; to think of one half as two fourths. Addition of fractions should be taught by first adding halves to halves, then thirds to thirds, then by adding halves and fourths, thirds and sixths, etc.

A cardinal rule to be observed at every step is to illustrate principles by the smallest, simplest examples. When thoroughly understood, the principle may be illustrated by more difficult examples. "From simple to complex." The principle should be illustrated not by one example only, but by numerous and varied ones, until it can be recognized in examples widely different.

Decimals should be taught by reference, not to common fractions, but to whole numbers. Whole numbers are written on the decimal scale. Reckoning from units we count to the left in whole numbers,

tens, hundreds, thousands; and in decimal fractions we count to the right, tenths, hundredths, thousandths; for example, 222.222. Familiarity with the fundamental rules in reckoning with whole numbers will render decimals very simple if taught as fractional parts of whole numbers written in the same scale, and not as a strange way of writing common fractions.

Compound numbers should be taught by the use of weights and measures. The child with a pint cup in hand should find by experiment that two pints make a quart, and four quarts a gallon. He should be accustomed to think of a quantity of liquid as so many gallons, quarts, or pints, according to his pleasure.

In like manner a given distance should be thought of as so many inches, so many feet, so many rods, according to extent. A yard should always suggest not only an absolute length, but its equivalent, three feet, thirty-six inches.

The cardinal principle here to be heeded is that the various modes of representing quantity are only matters of convenience. The same idea of quantity should be expressed in as many ways as the child is capable of using.

A study of the history of weights and measures, together with comparison of them, is full of interest to the student capable of reflecting upon them.

Processes should be taught before principles, and pupils should be led to deduce the principles for themselves and to formulate their own rules. Nothing

in arithmetic should ever be taught as a matter of memory which can readily be learned as a matter of thinking.

When students have advanced in the study of arithmetic to the limit of their powers of understanding, they should either have more extended and difficult drill in the application of principles already understood, or they should drop the subject until they are mature enough to fully understand the new difficulties.

TEACHING THE METRIC SYSTEM.

There are certainly three reasons for teaching the metric system in our public schools. The terms used in it are so frequently met with in current literature and in conversation that ignorance of their meaning is very embarrassing. The practical use of the system in business life is sufficient to warrant every prospective business man, and especially every possible traveler, in acquiring a working knowledge of it. But the weightiest consideration of all lies in the system itself. It is so simple and complete that its study gives pleasure as well as valuable mental training to the student.

The one indispensable condition for successfully teaching the system is a complete set of the usual weights and measures required in using the system — the meter, liter, and gram, their subdivisions and multiples. The pupil from the first should become familiar with these units by seeing, handling, and using them. He is not to learn about them, but to become familiar with them.

1. Exhibit to the class a meter, and let them see it, handle it, and measure with it. When by actual use the necessity arises for using fractions of the meter, their attention may be called to the fact that the meter is divided into tenths, or *deci*meter; hundredths, or *centi*meters; and thousandths, or *milli*meters. Thus learned, these subdivisions will appear natural, simple, and be easily remembered. The multiples of the meter, *deca*meter, *hecto*meter, *kilo*meter, and *myria*meter may then be taught. Copious exercises in reduction, ascending and descending, should be used until the pupils have thoroughly mastered all these terms, and grown familiar with the ideas of length represented by them.

The meter should be taught independently, without any reference to the yard, foot, or inch. The pupil should be accustomed to think of extension in terms of the meter directly, and not indirectly, by the aid of the yard.

2. Teach the meter in relation to the surface, and then to solids.

3. The transition from measures of solids to measures of capacity is very simple by showing the pupil that the cubic centimeter is a milliliter. He should actually see this by measuring the dimensions of the milliliters and observing that each is a centimeter, and then observing that it requires one thousand of these to make a cubic liter. The terms milliliter, centiliter, deciliter, should be illustrated, committed, and then rendered familiar by use.

4. To teach the measures of weight it should be

shown that the weight of a milliliter of water is a gram, and that the multiples and subdivisions of the gram are designated in the same way as those of the meter. Students should have practice in weighing articles, and designating their weight in terms of the gram.

5. I do not think it well to introduce the idea of comparison with English weights and measures until after the entire metric system has been presented. The object should be to lead pupils to think in the metric system, and thus to acquire the same kind of knowledge of it that is acquired by a French boy or girl who knows no other system of weights and measures. Thus when he meets the terms meter, kilogram, etc., he will at once recall the ideas that they represent without the delay and perplexity of first recalling the approximate English equivalent and then the idea represented by that.

6. When the metric system as a whole has been presented, and its parts studied in their relations to each other, it may be compared with the English system, the meter with the yard, the liter with the quart, the kilo with the pound, the gram with the grain, etc. A very few equivalents may be committed to memory.

7. By way of final review the pupils may be led to see the absolute necessity of weights and measures; the need of a system, definite, fixed, simple; the natural origin of the English system, with its complexity and inconsistencies; the philosophical origin of the metric system, with its advantages and disadvantages.

TEACHING PERCENTAGE.

The subject of percentage and its application to the processes of business, stocks, bonds, etc., is often quite perplexing to students. Many who enter the normal school are found to have very vague notions about it. One reason for this is that oftentimes students attempt the subject while too young to fully understand the reasoning involved in it. A certain maturity of mind, that usually comes only with age, is requisite for the mastery of the principles and processes of business. Another reason why girls especially find percentage and business arithmetic difficult is that they have very little practical knowledge of business. Very many of the terms are meaningless to them. It is not unusual to find young ladies who have never seen a check, draft, bill of exchange, letter of credit, insurance policy, or any of the ordinary foreign coins. A third reason for the obscurity of the subject is the faulty method of its presentation. Definitions and rules are first memorized, and the problems, classified and arranged under the several cases, are worked by rule.

There is perhaps no invariable method of presenting the subject, and it is difficult to put upon paper the various devices and incidental aids which are so helpful in presenting it. Quite as much depends upon the teacher's manner as upon his method. The following outline of a method may be found suggestive, especially to those inexperienced teachers who have no well-defined method of their own.

1. A meter affords a very simple means of introducing the subject. Let the pupils observe that it is divided into one hundred equal parts. The whole equals $\frac{100}{100}$. The half contains $\frac{50}{100}$, one quarter equals $\frac{25}{100}$, one tenth equals $\frac{10}{100}$, etc. An ordinary foot rule, such as carpenters carry in their pockets, answers an admirable purpose. Numerous problems can be presented to the eye by aid of the rule; for example, If from the whole, $\frac{100}{100}$, I take $\frac{25}{100}$ ($\frac{1}{4}$), what remains? Answer, $\frac{75}{100}$, or $\frac{3}{4}$. A line or a square drawn upon the blackboard is helpful. A hundred grains of corn or beans afford amusement and are useful in giving concreteness to a subject often taught too abstractly.

2. Numerous simple problems can be based on the above facts, such as $\frac{50}{100} + \frac{25}{100} = ?$ $\frac{75}{100} - \frac{25}{100} = ?$ $\frac{15}{100} \times 2 = ?$ $\frac{75}{100} \div 3 = ?$ These should at first be solved by observation, not memory. The pupils should be led to question each other until they become very expert in both question and answer.

3. The teacher may now explain that instead of saying one hundred hundredths, fifty hundredths, etc., we may say one hundred *per cent.*, fifty *per cent.*, etc. We may write it in full as above, or in form of a fraction $\frac{100}{100}$, $\frac{50}{100}$; we may indicate it 100%, 50%. Pupils should be drilled in writing and reading expressions of percentage.

4. They should then be led to make for themselves a table of equivalents from 1 to $\frac{1}{100}$

1	=	100%.		$\frac{1}{4}$	= 25%.
$\frac{1}{2}$	=	50 ,,		$\frac{1}{100}$	= 1 ,,

They should be rendered familiar with this table by use. The most common equivalents should be committed to memory, and so associated in mind that $\frac{1}{8}$ will suggest immediately $12\frac{1}{2}\%$, etc., $\frac{1}{5} = 20\%$, etc., and *vice versa*. Very great stress is laid upon this, for entire familiarity with these equivalents and skill in their use will greatly facilitate the progress of the pupil. Various problems, at first very simple, can be given and required of the pupils, such as: A farmer put one half of his sheep in one pasture, and 75, the remainder, in another. How many had he? If he put 10% of his cattle in one pen, 15% in another, 25% in a third, and the remainder, 100, in a fourth, how many had he? If 8% of his potato crop was 80 bushels, what was his crop? If 20% of a pole was below ground, and sixty feet above, what was its length? These problems should be increasingly difficult; should deal with concrete rather than with abstract numbers; should relate to other things than money, to avoid the misconception so common that percentage has only or chiefly to do with interest or other money transactions.

5. Pupils may now be led to the careful analysis, by inspection, of a question such as: What is six per cent. of eight hundred? One per cent. of eight hundred is 8. Six per cent. $= 6 \times 8 = 48$. Drill on meaning and use of terms, "base," "rate," "percentage." What per cent. of 800 is 48? If 48 is 6% what is 1%? Of what number is 48 six per cent.? etc.

6. Familiarity with this one example will reveal

the relation of "base," "rate," and "percentage." Pupils can then be led to propound to each other numerous problems of a similar nature. When familiarity has been acquired with the facts, then, and not till then,

7. The formulas may be introduced. Call attention to the meaning of the word percentage — "a given number of hundredths of a number" or quantity. Percentage is equal to the base multiplied by the rate. Abbreviated, $p = b\,r$. Let this be explained, illustrated, rendered familiar by reference to example already studied.

p (48) = b (800) × r (.06). $b = p \div r$. $r = p \div b$.

Pupils are not to commit the formulas to memory, but to recognize them as short ways of expressing the facts with which they have become well acquainted. If they know the meaning of the terms base, rate, percentage, amount, difference, and can give a clear definition of them, they can write the formulas. A very little drill will enable them to derive all other formulas from the fundamental ones,

$p = br$. $A = b + p$; $(b + br)$, and $(1 + r)\,b$. $D = b - p$.

It may not always be wise to introduce the formulas when the pupil is passing through the subject for the first time. They may be deferred to a later period when the subject is reviewed. This will depend upon the maturity of the class, or the ability shown.

8. A large number of problems should now be used for drill.

(1) Many of these should be given by pupils themselves.

(2) When called upon to solve a problem the student should (*a*) read it; (*b*) state what elements are given; (*c*) what is required; (*d*) analyze the problem; (*e*) give the appropriate formula; (*f*) perform the work, and (*g*) make the explanation, giving *a reason for each step.*

The pernicious habit of committing to memory definitions and rules, and "doing the sums according to the rule," tends to stupefy the reason, while the habit of analyzing the work done, giving a reason for every step, arriving at principles through processes, framing his own rules, and devising his own illustrative examples and problems, awakens the whole mind, stimulates observation, quickens the memory, develops the reason, and cultivates language.

9. When the students have mastered the subject of percentage they may be introduced to its various applications, beginning with profit and loss, or commission. The all-important point to be observed is *the essential unity of all the processes* in the various topics of business arithmetic. "Stocks" and "bonds" are only forms of percentage. If the students know percentage, and are able to recognize the elements base, rate, percentage under their various disguises and new names, their work will be easy and enjoyable. I have been told repeatedly by intelligent students that it had never occurred to them that stocks had any relation to percentage;

the subject had been introduced and taught as an entirely new one. Having finished percentage they took up another subject, "stocks," which was treated independently as though it had no connection with percentage. Instead of this it should, of course, be taught as percentage applied to buying and selling stocks. When students clearly apprehend the great truth that the general principles of percentage lie at the base of all the subjects of business arithmetic, including bank discount and foreign exchange, and that it is only necessary to note the peculiar features in the application of these principles, the whole subject takes on a new aspect.

10. It is very helpful to students who are unacquainted with business to see and handle notes, checks, drafts, letters of credit, bills of exchange, and coins of different countries, while they are studying the subjects in which these are involved.

Ordinarily teachers can by a little trouble provide themselves with these, and thus greatly abridge their labor, arouse interest, and impart definite knowledge on these obscure topics.

I may summarize the general principles involved in this method as follows: —

1. Percentage is to be based on common fractions.

2. It is to be taught inductively and not deductively.

3. It is to be taught so far as possible concretely and not abstractly. Facts precede principles.

4. The method is synthetic rather than analytic. Reviews should be analytic.

5. The method appeals to the understanding rather than to the memory. Memory conserves what the understanding grasps.

6. The pupil is led to see, to feel, to invent, to prove. He makes his own rules.

7. Each step prepares the way for what follows, or is based on what precedes.

8. One difficulty is presented at a time.

9. The various topics of business arithmetic are taught as applications of percentage, and constant reference is made to fundamental principles.

10. Each new subject is studied by comparison with what has gone before. In stocks "par value" corresponds to "base" in percentage, to "principal" in interest, etc.

Taught in this way percentage may be brought within the range of grammar school pupils, be made interesting to girls, and be, in a high degree, a gymnastic for the mind, and practical in life.

TEACHING SQUARE ROOT.

It is not unusual for students in arithmetic, when they come to square root, to be required to learn the rule, and then to work the problems by that. No effort is made to explain the process or to give any reasons whatever for any of the various steps. The minds of the students are thus left not only in darkness, but in perplexity, and oftentimes in positive distress. The subject thus taught not only does not

aid in training the mind to think, but it even hinders it in its growth and does it a positive injury. That this evil is very common is shown by the testimony of numbers of students who come to the normal school.

Square root may be taught so as to be perfectly plain to pupils of twelve years of age, and so as to be helpful to them in grasping mathematical truth, besides becoming a source of even much intellectual pleasure. The following is suggested as a brief outline of one method of doing this : —

1. The idea of a square should be awakened by a figure drawn upon the board. Pupils should be required to describe the square, and to draw squares of various sizes. They should be led to notice that a figure one inch, one foot, etc., square contains one square inch, one square foot, etc. A figure two inches square contains four square inches ; three inches square, nine square inches, etc. They will be interested in noticing the law of increase. The square of 1 is 1, of 2 is 4, or three more than the first ; of 3 is 9, or 5 more than the second ; of 4 is 16, or 7 more than the third. Thus the squares of consecutive numbers increase in the order, 3, 5, 7, 9, 11, 13, etc. Each successive increment is increased by 2.

2. They should be led to see that the surface of a rectilineal figure, not a square, is represented by the product of the length by the width. Thus the area of a figure five inches long by three inches wide is 5×3.

3. Let them observe that if they wish to increase the size of a figure, say five inches square, so that it shall be say seven inches square, they must add a narrow strip 5×2 to one side, then a similar strip to a second side, and lastly complete the figure by adding a little square 2×2. They will thus see that the larger square 7^2 is made up of three parts: 5^2, two rectangles 2×5, and 2^2. Let them build up many such squares until this simple truth becomes familiar to them.

4. Show that "squaring" a number is only another name for multiplying a number by itself, of which they have had numerous examples in the multiplication table: 2×2, 3×3, 12×12, etc. Let them construct for themselves a table of the squares of numbers from 1 to 100:—

$1^2 = 1$	$10^2 = 100$	$9^2 = 81$
$2^2 = 4$	$20^2 = 400$	$99^2 = 9801$
$3^2 = 9$	$30^2 = 900$	$100^2 = 10000$
$5^2 = 25$	$50^2 = 2500$	

This work can be greatly shortened by observing the law of increase stated under 1. Thus, if to 100, the square of 10, we add 21, we have 121, the square of 11. To this we must add 23 to get the square of 12 — 144; and to this 25, to obtain 169, the square of 13, etc.

5. Explain what is meant by the "square root" of a number — "one of two equal factors of that number;" "a second number which multiplied by itself will produce the first;" that it is represented by the

length of one side of the square figure that represents the number. Explain that "finding the square root" of a number is finding that equal factor, or that one side.

6. The pupils should now be drilled on the table.

(1) Such questions as, What is the square of 4? What is the square root of 16? The square of 9? The square root of 81? The square of 25? The square root of 625? etc., should render them very familiar with the table without requiring them to memorize it.

(2) They should be led to observe the "perfect squares" in the table; that there are no other perfect squares — none, for example, between 144 and 169; that as the square root of 144 is 12, and the square root of 169 is 13, there can be no square root of 150, which is a whole number, for there is no whole number between 12 and 13.

(3) They should be drilled in finding from the table the square roots of all perfect squares between 1 and 10,000; then of finding the square root, to within one, of all other numbers below 10,000.

The practice of finding by inspection the approximate square root of numbers is very important. It greatly simplifies the subject; it often serves all practical purposes without going further. This may be taught to pupils when making a final review of multiplication and division.

7. They may now be led to observe from the table that the square of units cannot contain more than two figures, since the square of 9, the largest unit,

is only 81; consequently the square root of any perfect square which is less than 100 must be units. In the same way lead them to see by examining the table that the square of tens gives hundreds or thousands, and in no case can the square of tens (99) exceed four places (9,801); hence the square root of any number consisting of three or four places will be composed of two figures, tens and units.

8. They may now be drilled in finding the square root of easy numbers (perfect squares and small numbers whose root is known) by construction. For example, the square root of 625 must consist of two figures (625); the left-hand figure of the root cannot exceed two tens, or twenty. Its square must be 400. But 400 does not exhaust the 625, and the square must be made larger. This can only be done by adding to it successively two rectangles 20×5, and a square 5×5. This will use up all the number, and 625 will be found to be the surface of a square whose side is $20 + 5$, or 25.

Let these problems be repeated until the process of construction becomes familiar. The pupil will *feel* the necessity for each step, can be led to tell what he does and why, and is thus able to enunciate a rule for extracting the square root.

$$\begin{array}{r} 25 \\ 25 \\ \hline 25 \\ \left\{\begin{array}{l}10\\10\end{array}\right. \\ \hline 4 \\ \hline 625 \end{array}$$

9. Students who are unacquainted with algebra may be led to see that when 25 is squared — multiplied by itself — the product 625 consists of four hundred, the square of the tens; two hundred, twice the product of the tens by the units; and twenty-five, the square of the units.

In extracting the square root of 625, when he has taken away 400, the square of the tens (20), there will be a remainder, 225, made up of two times the tens, or forty, multiplied by the units, and of the square of the units. That is, the remainder, 225, is made up of two parts, — the square of the units figure, which we may ignore for a time, and another number which is a product of two numbers, one of which is given, namely, twice the tens, — and that consequently if we divide 225 by 40 we shall probably ascertain what the other factor, the unit figure of the root, is. The quotient is 5. Testing the result, we find that 225 consists of two times the tens, 40, by the units (5), or 200, plus 25, the square of the units; hence the figure 5 is correct, and the true root is 25. In the same way build up the square of 45, 63, 82, etc., and then proceed to find by construction the roots of the squares thus formed.

More advanced students can be taught the formula, $(a + b)^2 = a^2 + 2ab + b^2$, or factoring, $= a^2 + (2a + b)\, b$.

The mystery of "doubling the root already found for a trial divisor" is made clear by showing that every remainder, after taking away the square of the tens (a^2), is made up of two factors $(2a + b)$ and b; that is, twice the tens plus the units, and the units. One of these factors is approximately known because the larger part ($2a$), twice the tens, is known. The other can be found approximately by dividing the entire remainder by the two tens. The square root is simply evolving what has been involved. If the

pupils can see how squares are made they can understand how they are unmade.

10. At this point a very little pains will suffice to explain the method of extracting the square root of decimals and of common fractions.

11. When they have become familiar with the foregoing they should be instructed in the properties of the right-angled triangle, with the meaning of the terms "base," "altitude," and "hypothenuse," and the relation to each other of the squares described thereon. Then various problems can be given, or better, required, involving the use of these facts. In the earlier stages of the work diagrams should be required, illustrative of the method of solution of each problem.

This method of teaching the square root rests upon a few simple principles: —

1. The subject of evolution should be presented as the counterpart of involution. First make the square, and then unmake it. Show its relation to the familiar processes of multiplication and of factoring.

2. Every step in the work should be made evident to the eye. Use diagrams freely. Nothing should be memorized.

3. Only one difficulty should be presented at a time.

4. Each advancing step should be made very familiar to the pupil by copious drill exercises.

5. Lead him to do his own work as far as possible, make his own tables, construct his own squares, explain his own processes, and deduce his own rule.

Original problems involving square root are much more valuable to the student than any found in books or made by his teacher. Everything should be thought out.

6. When the process has been thoroughly mastered and described in the pupil's own language then the rule of the book may be learned and repeated until it becomes familiar

XVII.

EXAMINATIONS.

It cannot be too often insisted on that examination is a good educational servant, but a bad master.

"A Protest," *The Nineteenth Century, November, 1888.*

Examinations in our schools cannot cease. They are a component part of the school. They should be reasonable. When all are so the better part of the profession will have no cause to condemn.

Aaron Gove.

What an eye-opener a searching written examination would be in schools where teachers talk and explain much and the pupils recite very little; where the instruction is given largely in the form of running talks without a halt to test results!

E. E. White.

I believe an examination should seek for outlines of thought, fundamental principles, general laws, comprehensive summaries, and not for detached facts, minute details, or special items of knowledge.

H. S. Tarbell.

XVII.

EXAMINATIONS.

Examinations wisely conducted are a process of teaching as well as of testing. — GEORGE A. LITTLEFIELD.

THE subject of school examinations is much mooted, and the most extreme views are expressed regarding them. Like every other educational device they are good or evil according as they are used judiciously or without discretion. By examinations is here meant written exercises produced to answer sets of questions proposed in writing by the examiner. These exercises serve many useful purposes, some of which are here named.

1. They may serve as a stimulus or incentive to study. Students who know that at some period of their course they will be required to give written answers to questions based on the work done are likely to be more attentive, industrious, and interested in it.

There is constant need of some motive to keep the mind active and attentive. There are many distractions; every student is liable to lose interest in study, especially if it has no special inherent attraction for him. Constant appeal to the highest motives should be made, and all proper effort put

forth to render the study attractive for its own sake. The incentive of the approaching examination should be used sparingly; indeed, not at all, perhaps, unless it is needed; but when it is needed, it is one of the legitimate agents at the schoolmaster's command.

2. They encourage thoroughness. Those who prepare for an oral recitation may depend upon chance or artifice or favoritism to help them through; but a searching examination calling for exact written statements is another matter, and demands better preparation. It is easier for most young persons to talk than it is for them to write. Less preparation is required for them to make a passable recitation than to write a paper, so that if a paper is never demanded they are likely to do only so much work as will enable them to meet the requirements of an oral recitation.

Besides, what is spoken is fleeting, what is written is permanent. What is spoken cannot so readily be dissected, analyzed, and criticized. But when the teacher has before him the written statement he can subject it to the most rigid criticism, and the fact that this can, and probably will, be done leads the pupil to devote more care to the thorough mastery of the subject.

3. They afford an opportunity, in some instances, for a review of the whole subject passed over during the term. The lessons from day to day are liable to be fragmentary, disassociated from the general topic. This is not a fault but rather a virtue. When examining a particular gem one does not wish to be

obliged to hold before the mind the whole science of mineralogy. Every lesson, however, has its relations to a general topic. Science is essentially the knowledge of subjects in their relations and interdependencies. Examinations may provoke to such a review as will bring the whole before the mind in such a way as to call into clear light the logical relations of its several parts. If this review scans the subject as a whole, and fuses it in the mind so that it is held, as it were, in solution, there is great gain. The review should be not merely a roll-call for facts, but a thought exercise in quest of logical mastery of the subject.

4. They are often valuable as an exercise in English composition, requiring as they do clear, concise, comprehensive statements. One of the great ends to be obtained by study is power of expression. One needs not only to know, but to be able to express what he knows. It is not enough to be able to express it in oral speech, but it is important to know how to express it in written language also. Literature is a valuable result of education. The practice of giving in a few pages of terse, good English the result of one's study for months of a particular branch of learning is an admirable preparation for authorship.

5. They are revelations to the pupils of their own ability and attainments, as well as of their weakness and defects. One great aim of education is to objectify the student's mind so that he may look upon himself, "see himself as others see him," in

order that he may have a just estimate of himself. When he has pored over a textbook for a few weeks, recited from it, listened to recitations by his classmates, and explanations by his teacher, he may easily be deceived as to the real extent of his knowledge. An examination that requires him to state in writing just what he actually knows often serves to undeceive him. Conscious ignorance not only takes away conceit, but is frequently the very beginning of knowledge.

6. They call for concentration of mind, sustained mental effort, and a ready use of one's resources, which is a valuable educational discipline. In the class students may depend upon each other and may lean heavily upon the teacher. In the examinations they must depend upon themselves. Whatever of intellectual energy is put forth must be self-evolved. It cannot be called forth by others: it is the student's own act.

A recitation is short, and in a large class makes comparatively little demand upon any one individual. In an examination a demand may be made for as long a continuous concentration of mind as the student is capable of. When not too prolonged and severe, these examinations are periods of mental growth. Many students at such times become conscious of a degree of mental power of which they did not know themselves to be possessed. They rise to a higher plane of intellectual activity, and look back to successive examinations as a traveler looks back to the successive heights he has climbed in reaching the summit of his ambition.

7. They reveal to the teacher the results of his teaching, the failure or success of his methods, and thus afford an opportunity of modifying his work when necessary. Teachers are prone to mistake the attentive listening of the student for a real appropriation of his teaching. The steady eye does not always betoken an understanding mind.

The test of good teaching is the independent mental activity awakened in the mind of the pupil. Whether this exists or not cannot always be known from oral recitation. The presence of the teacher and the stimulus of his eye and voice may arouse an energy that wanes when he is absent. He looks for permanent results. The written examination paper that is the sole product of the student's thought is a revealer of how far the teacher's efforts to awaken permanent intellectual activity and to impart real knowledge have been successful.

8. The tabulated results of a series of examinations, extending through several months or years, indicate with considerable certainty the student's trend of mind, habits of study, and scholarly development. These results are especially valuable to parents in deciding what is best for their children.

It is desirable that the education of a child should be many-sided. All his powers should be called into action and should be symmetrically developed. The tendency is for the pupil to have a liking for a certain class of studies, as for mathematics, or natural science, or language, and to pursue these to the neglect of other branches of learning, and

thus fail to secure both general culture and liberal knowledge. This trend of mind is nowhere more distinctly shown than in the results of examinations. They sometimes reveal such unexpected power in some certain direction as to warrant an early specialization of study.

9. The results are helpful to superintendents and others in forming an opinion of the progress of the pupils and the work of the teacher. There is need of supervision of the work done where many teachers are employed in the same or similar schools. Especially is it needful to have an eye on the work of those who are young and inexperienced. Personal visits on the part of the superintendent are valuable in certain directions, but the written questions prepared as a test of the work done, and the character of the papers submitted in answer, are invaluable as indicating the nature of the work accomplished by the teachers.

As one element in determining the fitness of pupils for promotion they perform an office that cannot be performed by any other agency.

10. They give to school work a kind of dignity, increase the student's self-respect, and impart to the teacher's mind a judicial habit, freeing him from the great tendency to judge of his pupils by sentimental regard rather than by critical judgment.

Study is work and not play. School life has a serious side to it; it is a preparation for the conflicts and struggles that are inevitable when schooldays are over. Every exercise should be so conducted as

to contribute to the final end of developing a sturdy, honest, independent manhood. The pupil should be taught that he must stand alone and be judged on the merits of his work. Written examinations develop this spirit.

It is hard for favoritism or for a too generous pity to break through the restraints of examination papers, and to give to one unmerited credit and withhold from others rewards honestly earned.

With these ends in view, how shall the examinations be conducted?

1. They should be an ordinary, and not an extraordinary, part of school machinery. If they are held only at the close of a term or at the conclusion of a study, the students should be prepared for them by the character of the daily recitation, and by occasional written recitations, and "tests," which resemble the written examinations, but are less severe.

Pupils who are trained to express their thoughts in writing acquire great facility in doing so and lose nearly all their dread and anxiety on the approach of an examination.

The great labor incident in making out sets of questions and looking over a large number of papers may be abridged by training the pupils to share the work with the teacher.

2. The purpose and method of the examination should be fully explained to the pupils and their mistakes and failures should be pointed out.

The antipathy which many of them have to examinations arises frequently from a misunderstanding of

their purpose. They often regard them apparently as traps and pitfalls set to catch the unwary. Sometimes they complain of them as unfair. This can be prevented by — fairness, and a full exposition of the principles followed in marking.

3. The questions should be adapted to the age and ability of the pupils, easy enough to encourage them to attempt all, and difficult enough to call for their best efforts: should pertain to the work actually done: should be explicit, concise, logical, requiring thought and a mastery of principles as well as memory.

It is no small art to question correctly. There is no surer test of the teacher's power than this. There is no greater qualification for successful teaching than the ability to question well. Great attention should be paid to the acquisition of this power.

Advanced pupils, particularly normal students, should be carefully trained in framing questions, singly and in sets. There is no better review of a subject than is involved in making out a series of questions covering it.

4. Too much importance should not be attached to the results. They should be reckoned as only one element, among several, in determining the standing of the student and his fitness for promotion or graduation. They should never be made the basis of ranking or the sole ground of promotion.

There are some elements of intellectual and moral growth that perhaps cannot be tested by questions.

A written examination at best is an imperfect test

even of knowledge. It should not be allowed to usurp too large a place in the routine of school life. This it may easily do, and often does.

5. Examinations should always be regarded as simply one means or device in the process of education and should never be treated as if they were the goal to be gained. They are a means, and not an end.

The daily recitations are chiefly to be relied on in determining the pupil's work, and should take precedence over the examinations in determining progress and fitness for promotion. We should not lose sight of the fact that the chief value of the examination is its reflex influence on the daily recitations.

6. They should not be so severe or prolonged as to overtax the student's powers, should be conducted with absolute fairness and impartiality, as well as with good sense in regard to time, place, and conditions; and proper allowance should be made for any exceptional circumstances, such as illness on the part of the student. The "final" examination should be held long enough before the close of the term to allow the teacher to make the proper use of the results before the class separates.

The outcry lately raised in England against competitive examinations, which has voiced itself in the imposing "Protest" published in The Nineteenth Century for November, 1888, is not pertinent when applied to examinations as school exercises. The evils complained of in that famous paper are

due in part to the incidental abuse of examinations, and in part, as is shown in the reply published in The Nineteenth Century for December, 1888, to the state of the civil service and the condition of society in England. Teachers should not be frightened into the abandonment of a faithful and indispensable servant on the first whisper of evil against his good name.

XVIII.

THE IDEAL SCHOOLMASTER.

God mouldeth some for a schoolmaster's life.

Thomas Fuller.

The brightest minds of Athenian philosophy were the instructors of the Athenian youth.

John Lalor.

O'er wayward childhood would'st thou hold firm rule,
And sun thee in the light of happy faces,
Love, Hope, and Patience, these must be thy graces,
And in thine own heart let them first keep school.

S. T. Coleridge.

Full well they laughed with counterfeited glee
At all his jokes, for many a joke had he.

Oliver Goldsmith

He must pour out upon them the results of his reading, his thought and experience, with unsparing prodigality, forgetful of himself and his own reputation; even willing, like a true mother, to give up his own mental being if he can only see the life of other souls springing into power under his hand.

Martin B. Anderson.

XVIII.

THE IDEAL SCHOOLMASTER.

Although we may never be able fully to realize our ideal, yet woe be to us if we have no ideal to realize. — ARCHBISHOP WHATELY.

CROWNING the Acropolis at Athens stand the ruins of what was once the most beautiful temple in the world. Faultless in its proportions, wellnigh perfect in the execution of its details, of the purest white marble, and adorned with sculpture of the most exquisite workmanship, it was the glory of Athens, the pride of Greece, and a wonder of the world. Even in its ruins the Parthenon draws to itself with magnetic power the hearts of all lovers of the beautiful.

For centuries in many countries the human mind had wrought at an ideal of the beautiful in the form of a temple. At last the ideal was reached; it has never been surpassed. The Parthenon did not indeed fully embody that ideal. The ideal never becomes real. The mind may seize it, but the hands never. As an ethereal vision it may be faultless, but as an embodied reality, wrought in gross materials by human workmanship, it will reveal many a flaw and defect. Nevertheless as an ideal, what power it had over men's minds! What resources, what skill, what energy, what sacrifice, what patient waiting did it

evoke, until at last men saw, admired, and loved it as "a thing of beauty, and a joy forever." What *sovereignty* that ideal has had over men's minds! In every age and in every country artists have borrowed from the Parthenon, and have attempted countless times, in whole or in part, to reproduce this matchless building. Even those who have bent their energies to develop a style of architecture wholly different — Byzantine, Roman, or Gothic — have felt the strange spell of this ideal urging them to their utmost endeavor, that what they produced should be as perfect of its kind as that ideal of the Greek temple, which lent such grace and beauty to the shrine of the virgin goddess.

It is ever thus with ideals. Seemingly baseless as the fabric of a vision, they are the most indestructible of human creations. An ideal once formed never perishes from the earth. It belongs to the empire of truth, whose subjects are immortal.

It may not be unprofitable for us here to consider for a little while — even though the picture be drawn only in outline, and that by an unpractised and unskilful hand — the ideal of a schoolmaster.

We are the representatives of three hundred thousand American schoolmasters, in whose hands are placed very largely the destinies of ten millions of school children. What manner of teachers should we be? What is our aim? Toward what are we striving?

It is perhaps needless to say that the term schoolmaster is used as including all of those who devote

themselves to teaching. It is not restricted to any one class or grade or sex. In this day, when so many teachers are women, any discussion of teaching which did not apply to them and their noble work would be fatally defective.

It may also be well to add that the effort in this paper is to present the spirit of teaching, the *tout ensemble* of pedagogical virtues, rather than to sketch the portrait of any single individual. Should any of us measure ourselves by a perfect standard, we might well be abashed, but when we look upon our associates and realize that we are members of a great and noble brotherhood of earnest and true workers, who, taken together, represent all that can be claimed for the teacher, we may well "take courage," and strive, each in his own sphere and according to the measure of his ability and of his opportunities, to share in this ideal spirit, and to contribute something to the sum total of teaching power.

No artist, however humble, if he did but have the spirit of the artist, ever stood in the presence of the Parthenon without feeling his soul quickened and his aspirations ennobled. Even a picture of the temple in ruins stirs men's souls. If the sketch of the ideal schoolmaster which I now hold before you is true to nature, it may be helpful to some at least, and harmful to none.

What now is our ideal of the teacher?

The ideal schoolmaster is a *manly man*, one who has lofty conceptions of human life and duty, gen-

erous sympathies, keen discernment of life's realities, and who fully appreciates its responsibilities and privileges.

Conscious of ability of a high order, of refined tastes, of large possibilities of achievement and enjoyment, he will find in his work of teaching ample scope for all his powers and attainments. As one who is to shape human destinies and mold human lives quite as much by what he is as by what he does, he is guided in all his actions by manly principles. Keen and accurate in his observation of facts, deliberate in his conclusions, wise in his enactments, judicial in his decisions, just in his administration, inflexible in his adherence to right, consistent in all things, full of kindliness and helpfulness in discipline, patient with dullness and tender of the weak and unfortunate, always making new acquisitions for himself, and not only earnestly interested in the welfare of each member of his little kingdom, but an active, intelligent, useful member of the community in which he resides, he is a man to be admired for his true manliness. Teaching has its boundaries and imposes restrictions a little irksome at times, but this is true of every human calling. It is incident to life. The soul of man, because it is a soul, feels deeply the limitations of matter. This is prophetic of a realm of pure spirit. But the ideal schoolmaster finds in his field of labor fullest opportunity for the exercise of the greatest and noblest qualities of manhood. He has entered a profession where the possibilities of labor are boundless, where

new fields of thought and knowledge are ever presenting themselves, where there are opportunities of seeing reproduced in other lives all that is noblest and best in his own.

Teaching is a profession so honorable that it confers dignity upon all who enter it worthily, and borrows dignity from none. No man ever yet was so great that he might not have found in teaching exigencies for which his greatness would not suffice.

The ideal schoolmaster blends in himself such elements of body and mind and heart that all, not only those who from their inferior position may even look up to him as a superior being, but all who have relations with him, whether personal or official, business, social, or professional, will unite in saying, This is a man. Not a transcendental being, in the world but not of it, but a man of the people, a veritable product of his age, a typical representative of the best results of the civilization of his time. Dwarfed he may be by his environment, but he is all the more truly manly by this. The superhuman only can rise above human infirmities. Even Jesus, that he might become the great Teacher of our race, emptied himself and became a man.

The ideal schoolmaster is not a recluse, not a pillar saint, not a hermit, not a morose man, nor one solemnly weighed down by either a sense of his own dignity or of the grave responsibilities of his office, but a man living among men, practical, full of commonsense, tact, and worldly wisdom. He is all the better for a little rough experience in "boarding

round," that he may see himself as others see him, and — others as they are. A man of energy, force of character, of good business habits, promptness, decision, regularity, and fidelity, having a just regard for himself, his good name, his personal habits and appearance, respectful of the rights of others, considerate of their feelings, polite in manner, gentle in speech, he is positive without rudeness, independent without asperity, refined without being effeminate, and elegant without losing his simplicity.

The highest type of manliness does not exclude a keen relish for humor. The young are full of frolic and play; they like a joke, enjoy a laugh, and are won by a smile. Sunshine is more effective in germinating plants, developing flowers, and maturing fruit, than darkness. Potato vines do, to be sure, grow in a cellar, but they are pale and sickly. Frost has its uses, and doubtless the world has need of icebergs, or the North would not produce them so abundantly. But we should have a dreary climate were it not for the south wind and the Gulf Stream.

The ideal schoolmaster *is a philanthropist*, one who loves man as man, one who recognizes the inherent dignity of the human soul, one who grasps the basal unity of all, of whatever race, condition, or sex; who accepts practically the one supreme fact that every being who bears God's image has in germ the possibilities of all human excellence and attainments, and is entitled to the fullest development possible of all his powers. That which marred the noble ideal of education formulated by Plato and Aristotle was the

fact that it was limited to the few, while the many were debarred from participating in its advantages. The ideal schoolmaster asks for talent, or rather teachableness, wherever it may be found. He finds it among slaves as among freeborn, in the hovel as in the palace, among the outcasts of society even as among the rich, the titled, and the proud. To be well born is indeed a boon, but who can be better born than he who has God for a father? No pessimist bemoaning the remediless degradation of the race, no dyspeptic deeming all men fools but himself, no aristocrat wondering what common people could ever have been made for, no educational dude prating of culture of which the masses are incapable — none of these can be an ideal schoolmaster. Only he who has an unconquerable faith in human nature, in the pedagogic salvability of the race, who has an enthusiasm for young people, and an ardent zeal for the unfortunate, the lowly, the poor, and the ignorant, who with a beneficence wellnigh divine would scatter the blessings of learning freely among all classes — including negroes, Indians, Chinese — typifies the spirit of the age as embodied in the ideal schoolmaster.

His broad philanthropy, which embraces in its generous scope every individual of the race, kindles to a white heat in the schoolroom, and, losing its generic character, takes the form of an intense personal interest in the welfare and progress of every child committed to his care. He stands heartily as well as officially *in loco parentis*.

It goes without saying that the ideal schoolmaster *is a patriot.* As a student of history he recognizes the almost omnipotent power of the State over human destiny. It is true, in a sense, that the State, with its constitution, its statutes, its institutions, is the creation of the people, the organized expression of their life, and yet it is likewise true that the State in turn affects most powerfully the life of the people. The influence of the State pervades every city, village, hamlet, farmhouse, workshop, and fireside like an atmosphere. If that atmosphere is malarious, the health of every citizen suffers. The black code legalizing and protecting human slavery acted like a rank poison, threatening to destroy our national life. Fortunately an overdose brought on a crisis, with an upheaving that left the body politic weak, but purged and convalescent. The iniquitous legislation that discriminates against the Chinese, though of a milder form, is no less marked as a poison that is doing its deadly work. On the other hand, the Emancipation Proclamation, the laws against polygamy, the enactments in favor of educating the Indian and of lifting the mass of colored citizens to a higher plane of civilization, act as tonics, or rather, they are food, and give health and strength to the people. The ideal schoolmaster, loving his country as the land that gave him birth, and as the cherishing mother whose kindly offices have attended him from his earliest years, in whose history he takes pride and in whose future his hopes are centred, seeks by all proper means to promote

her weal. He recognizes his obligations as a citizen, and gladly shares with others whatever of civic burdens the exigency of the times may impose. He is not at liberty to wrap the silken folds of his scholar's gown about him, refuse to "mix in politics," and thus give over the government, with all its sacred interests, into the hands of those who make politics a trade, who gamble in public offices, barter their souls for official plunder, and who, left to themselves, would bring upon the republic the ruin that inevitably awaits us when good men and true no longer feel a personal responsibility, not alone for their vote, but for the full, intelligent, conscientious discharge of every civic duty.

Looking over his little flock of pupils, his penetrating eye sees beyond the present into the not distant future, when these boys and girls are to be the men and women, the fathers and mothers, to whose hands the destinies of the republic are to be entrusted.

In some of his daydreams there comes to him a panoramic vision. He sees before him a king seated upon a throne, swaying a righteous sceptre over a vast realm and mighty people. He is clothed in purple, wears a crown glittering with gems, and holds a golden sceptre, at whose motions wars are waged, peace maintained, and laws enforced.

The scene changes. Before him rises a judgment hall; men of reverend years and countenances full of that majesty that is born of wisdom, experience, and high endeavor, and clothed in ermine, typical of

their purity of intention, sit to try great causes, involving the property, reputation, and life of the citizen, and the maintenance of law and equity in the land.

Again the scene shifts. A vast palace of marble stands before him, its lofty dome a thing of beauty and magnificence. Within are men gathered from all sections of the republic to make her laws and maintain her institutions. Again he looks, and now there comes a scene more impressive than any that has yet gone before. On a November day, quietly as though it were an ordinary matter, but yet gravely, as if appreciating something of the deep significance of the act, he sees ten million free men depositing in their appointed places the single ballots that make and unmake senators, judges, and presidents, revolutionize society, and reconstruct constitutions.

Who are these potentates? these mighty ones of the earth? He dreams no longer; the vision is a reality. These little urchins that look up so innocently, so helplessly, so docilely into his face are the future sovereigns, judges, legislators, voters, who now look to him for that knowledge, training, inspiration, that shall enable them in some degree to fulfil the august duties that must devolve upon them as their birthright in this land of liberty. Can the ideal schoolmaster be less than a patriot who will seek by all the means within his power to so administer the affairs of his little republic that it shall embody and show forth in miniature all those exalted virtues which on the broader plane of public action dignify

human nature, enrich the national life, and give perpetuity to the nation? He knows

> "That the riches of the commonwealth
> Are free, strong minds and hearts of health,
> And more to her than gold or grain
> The cunning hand and cultured brain."

The ideal schoolmaster is *a scholar* — a man who knows. He is not necessarily a walking encyclopædia, although he must be somewhat encyclopædic in his knowledge. Of course he must know facts. He is not a Gradgrind attempting to measure the universe with a foot rule, and refusing to admit that anything has value unless it can be estimated in dollars and cents. Nevertheless facts, things done, tangible realities, actual verities, lie at the basis of scholarship. They are the foundation of all reasoning. There can be no science without them. There can be no intelligence without them. The universe is a vast congeries of facts, with some of which the scholar is to become acquainted. The teacher's knowledge of facts must be in a large degree immediate, he must grasp them in the concrete. They must be a part of his experience. At least typical phenomena, physical, metaphysical, historical, must pass under his own personal observation, and thus afford him a key to booklore. Books are to him simply the record of other men's observation and reflection, which differ from his own chiefly in being more extended. His acquaintance with facts will be accurate, not necessarily exhaustive, but so far as he

forms a mental picture of phenomena it will conform strictly with the reality. He knows facts in their relations; his knowledge is scientific. There are no isolated phenomena; all things are related to all things. This universe is an expression of thought, the embodiment of ideas. It is a cosmos. Order reigns everywhere. Science is but the partial revelation of the nexus that binds the facts — often widely separated in time, space, and surroundings — into a harmonious whole.

The ideal schoolmaster, while guiding his pupils in their search after facts, leads them to a comprehension of their deep significance, and instructs them in the arranging and classifying of the phenomena according to their logical relations. The true student of nature is he who studiously and reverently thinks over again the thoughts of the Creator. The ideal schoolmaster's knowledge is catholic; it is not circumscribed by any narrow boundaries. "No pent-up Utica" is his. All knowledge is related, no science stands alone, nor is any one science supreme. The sciences of theology, jurisprudence, politics, language, mathematics, biology, physics, chemistry, history, etc., are correlated. They are mutually dependent and mutually interpretive. The man who knows but one thing is ignorant of that; the master of only one science is but a tyro in learning. Besides, all sciences are the product of the human intellect, the spontaneous creations of human thought in its painful but triumphant march toward the conquest of the secret of the universe. They are in their entirety the fruits

of human culture, and they are in turn the necessary instruments for the training of the human mind.

As a ripe scholar the ideal schoolmaster stands as an interpreter of the past. His is the key that unlocks the vaults where all her treasures are guarded. Whatever of truth has been spoken by the great and good of old, whether in philosophy, science, or literature, is his, and finds in him a friend and conservator.

The ideal schoolmaster *is a philosopher*, a lover of wisdom, a man who seeks truth for truth's sake. Not content with accumulating, arranging, labeling, and classifying facts, nor even with the established conclusions of science, he pushes his inquiries into the realm of the unformulated. While his chief business is to sail by the chart and to instruct his pupils in the well-established code of navigation, he does not hesitate to turn now and then into unexplored regions, and to cast his plummet into depths as yet unfathomed. Search after truth is its own reward, and, even though unsuccessful, lends a new value to treasures already gathered.

But pedagogy itself offers a wide and inviting field for the thinker. The final word in the philosophy of education has not yet been spoken. Teaching as a science has never yet been fully unfolded. The question has even been raised whether there *be* a science of teaching. Certain it is that there are many pedagogical empirics; that traditional methods of teaching are largely in the ascendency; that much of our so-called education is not only one-sided and defective, but positively unphilosophical, not to say

irrational and injurious; that among the advocates of the new education there is lack of agreement even on fundamentals, much more on questions of detail. We might go further and acknowledge that some of those who are reputed to be masters of the philosophy of teaching are deficient in skill in applying rational methods to the perplexing problems in the daily routine of school teaching. Shall we then give up in despair and say that there is no science of teaching? that pedagogy is a dream, and the zealous educational reformers only dreamers? This would be to charge folly upon some of the greatest minds of the past. For Plato and Aristotle, Quintilian, Comenius, Locke, Milton, Rousseau, and others who have philosophized on this great theme have been recognized as able thinkers, and though they may not have formulated a science that will satisfy this critical age, they have unfolded great principles, and pointed the way to a true philosophy of education. Plato laid the foundations of this philosophy in his definition of a good education as that which "gives to the body and to the soul all the beauty and perfection of which they are capable."

Aristotle anticipated Froebel when he advised that even the games of little children not yet old enough for school should be a preparation for the serious work of later years.

There is now a great body of educational doctrine accessible to every earnest student of pedagogy, invaluable to every intelligent teacher, and absolutely indispensable to him who aspires after the

highest excellence in the noble work of forming and informing the human soul. The ideal schoolmaster is a student of pedagogy, makes himself acquainted with the labors of those who have sought to give a reason for everything done in education, and to find a rational method for reaching every desired result.

He is not an imitator, but endeavors to acquaint himself with the nature of the complex being whose destiny is so largely committed to his keeping, labors long to form for himself a true ideal of education in its broadest acceptation, and having carefully considered the educational value of the different knowledges, he is not satisfied until he has worked out for himself a method which, while conforming to the laws of mind and the logical relations of science, will give free play to the individuality of the pupil and the personal idiosyncrasies of the teacher. He is a philosopher, but philosophizes in order that he may be the better workman. The goal of his endeavor is action, the fruit of all his toil is higher results in the formation of character. His philosophy reappears not so much in books as in lives. He seeks to form, not a school of philosophy, but a school of philosophers.

Standing on the high vantage-ground of philosophy, looking at life and its problems through a transparent atmosphere, he beholds what escapes the vision of less fortunate men. He is a veritable seer. He points out defects in reigning ideals, faults of execution in their embodiment, suggesting true ideals and better methods, and thus ushers in a

nobler future. Like some Alpine peak whose snow-clad summit glows with the first rays of the dawn, and heralds the day while the valleys are still enveloped in darkness, the ideal schoolmaster catches the glow of the coming millennium and calls to action and to rejoicing.

As an educator one of his chief functions is to train his pupils to think. "I imagine," said Bishop Berkeley, "that thinking is the chief desideratum of the present age." "The indisposition, nay, the angry aversion, to think," says Coleridge, "is the fact that forces itself on my notice afresh every time I enter the society of persons in the higher ranks." Carlyle declares "that a thinking man is the worst enemy the prince of darkness can have." Dr. Channing affirms that "thought is the fundamental distinction of mind, and the great work of life." Sir Joshua Reynolds paid this high compliment to one of England's greatest men: "Whatever merit my discourses have," he said, "must be imputed in a great measure to the education which I may be said to have had under Dr. Johnson. I do not mean to say that he contributed a single sentiment to them, but he qualified my mind to think justly. No man had, like him, the faculty of teaching inferior minds the art of thinking." Locke says: "It is thinking that makes what we read ours."

The power to think, to observe, analyze, compare, judge, abstract, generalize, classify, infer, and carry on complicated processes of inductive, deductive, or analogical reasoning, such as is required of men in

even the humbler walks of life, if they would enjoy prosperity, health, and happiness, is dependent largely upon the habits that are formed in the schoolroom under the guidance of the schoolmaster. If he be not a thinker, how shall he train others to think?

The ideal schoolmaster *is an artist.* The materials upon which he works are the bodies and the souls of living human beings; the ideal toward which he strives is their full development; his tools are the truths of science; the principles that guide him are the laws of rational life; the special methods that he follows are conditioned upon the especial end in view, the peculiar laws of the faculty or power to be dealt with, and the nature of the specific truth used as an instrument. To succeed he must possess the keenest appreciation of the beautiful, since nothing in the created universe is more beautiful than the human soul; he must have the clearest conception of the completed work in all its extent, proportions, and details, for nothing is so complex as the human organism; he needs the nicest discrimination between the true and the false, the good and the bad, the beautiful and the deformed, since nowhere else is one more liable to err than in the training of the immortal mind, and nowhere else is error more fatal. He requires the most consummate skill because the material in which he works is so delicate, the effects of his labor so lasting and far-reaching in their consequences, and mistakes so remediless. The sculptor may cast aside a ruined statue, and choosing another

block of marble begin his work anew. But the teacher's blunders are wounds that never heal, scars that are never effaced. The painter may erase his work, change its form, color, tone, expression, or throw away his disfigured canvas and begin *de novo*. Not so with him whose canvas is the human soul. Every stroke is ineffaceable; the false coloring is there for eternity.

The architect is not limited as to time; he may build to-day and suspend his work to-morrow. Six centuries elapsed after the foundations were laid at Cologne before the final touch was given to that wondrous cathedral. But the artist who seeks the unfolding of the human soul must studiously observe the set times for his work. An opportunity passed never returns. The work of to-day must be done to-day. His work is ruled by the imperative *now*. Work of to-day omitted is not only irreparably lost, but it renders the full work of to-morrow impossible. A stone misplaced to-day is misplaced forever, marring the symmetry and endangering the safety of all the structure to be built upon it. The musician striking a false note simply produces a discord that is forgotten or unnoticed in the great volume of harmony. The teacher striking a false note mars the instrument, and the marring is irreparable.

Teaching is an art that requires skill, a skill that comes by practice and as the result of long experience. But it is the skill of an artist, not of an artisan, that is required. Teaching is one of the fine arts; rather, it is the finest of arts. No other is com-

parable with it. All other arts deal with lifeless matter. Teaching has to do with the living soul. All other arts are perishable, this is for eternity. With the mechanical arts skill is the highest proficiency, and automatic precision is attainable. The man reaches his perfection when he does the work of a machine, and machines are continually displacing men. But in teaching, the skill needed is the cunning of the mind and not of the hand. It is the delicate poise of the judgment, the keen intuition into motive, the remorselessness of reasoning, the inflexibleness of will, the directness of aim, the turn of a sentence, the flash of an eye, the detection of falsehood, and the uncovering of error, the judicious blending of praise and blame, the wisdom of help withheld and of aid proffered, the quick discernment of evil tendencies, and tact in developing any latent power of that wonderful piece of mechanism the human body, as well as of perception, memory, imagination, thought and feeling, ability to arouse energy, kindle enthusiasm, restrain passion, regulate desire, direct conscience, and enthrone reason, this is the skill required of *this* artist, the ideal schoolmaster.

There are now and then in the world's history gifted souls who, like Leonardo and Michael Angelo, combine the genius of architect, painter, and sculptor. But it rarely happens that men excel in more than one line of artistic work. To the schoolmaster is reserved the high distinction of manifoldness in artistic results. Under his skilful training there awaken to consciousness souls of the most various

endowments — one to achieve distinction as an orator, another as a leader of armies, another as a great thinker, a poet, or a sculptor, still another as an explorer, opening up new continents, or an inventor turning to new uses the forces of nature. His is the rare prerogative of recognizing the existence of these possibilities, calling into action these slumbering powers, and guiding to glorious results these godlike energies.

He is not so much a scholastic artist, however, as an artistic schoolmaster. His love of order, system, beauty manifests itself in everything about him: in the attractiveness of the school-grounds, the arrangement of his programme, the movements of classes, and in the consummate skill with which government — quiet, unostentatious, effective — is maintained. To him school discipline is not an ideal to be worshiped, but a servant whose aid is most valued when least obtrusive. It is an instrument to be kept bright, sharp, and ready for use when needed, but out of sight when not called for.

And, finally, the ideal schoolmaster *is a Christian;* not a sectary nor a bigot, but a man who, without cant or hypocrisy, reverences God and recognizes in Jesus Christ the ruler of the universe. That wonderful being whom we call man has a religious nature as well as a body and a mind. If it is true, as Plato has said, that a good education is the full development of man in his entirety, then it must include the unfolding of that which is the crowning excellency of man's nature, his religious susceptibilities.

That education which secures to him merely the training of his body makes him only a magnificent beast. That which affords him an intellectual training alone may make of him a Mephistopheles, a sort of human devil, acute, cunning, capable, but unprincipled and full of all subtlety. That training which would secure to him the health of body, vigor of mind, and discipline of his moral powers, would fit him for citizenship, but if it left him untaught religiously, it would make of him only a cultivated heathen. Man is not a congeries of disconnected natures. He is a unit. Education pertains to him in his entirety. A complete education is a symmetrical education. Man without a religious training is like a kingdom without a king, an army without a general. He may be admirable for what he suggests, a splendid torso, but nothing more.

It is impossible for man to attain to complete manhood without the unfolding of each and all his powers. Not only is the higher conditioned upon the lower, but the lower nature depends upon the higher for its full significance.

The ideal schoolmaster is not necessarily a preacher, and he does not push his religious tenets to the forefront, much less is he an offensive propagandist of any narrow creed. But he is a man whose entire being is adjusted to its environment. As a member of society he is in sympathetic relationship with his fellows. As a creature of the earth he understands nature's laws, loves her ways, and yields obedience to her requirements. As a self-conscious being

he is at peace with himself; and as a spiritual being he is at one with his Maker and Judge. What he is himself, sincere, honest, truthful, devout, he — more by example than by word, rather by the alchemy of godly living than by means of formal instruction — strives to render his pupils.

Man may be likened to the magnificent cathedral at Milan. His physical nature is the deep-laid and massive foundation; his intellectual nature the strong walls with buttresses, towers, and vaulted roof; his æsthetic nature supplies the statues, the noble windows, and the golden treasures in the sacristy; his moral nature may typify the great organs, the choirs, and the vestments; while his religious susceptibilities find their counterpart in the voice of prayer and songs of praise, which, rising from ten thousand lips, mingling with the joyous strains of the organ, rise and swell until filling all the vaulted arches of the mighty pile, they float away heavenward to the ear of Him for whose worship this beautiful temple was built.

Man without religion is a temple without worship. An irreligious teacher is one who constructs a cathedral without thought or care as to what use shall be made of it.

The ideal schoolmaster, then, is one who rejoices in the highest prerogatives of manhood, strength of body and greatness of soul; a philanthropist who thinks nothing foreign to himself that pertains to man; a patriot who feels a personal responsibility in promoting the weal of the Republic; a scholar rever-

encing the past and sifting from its history all that is true and beautiful and good; a thinker grappling independently with life's problems, pinning his faith to no man's sleeve, but forming for himself and others credal statements; an artist who, knowing the difficulty and delicacy of his self-appointed task, bends every energy to attain requisite skill, so that the trained hand and the educated eye may work in unison for the accomplishment of its high endeavor; a devout man, who seeks as the reward of his life not fame, riches, or power, but the consciousness of duty done toward his pupils, his country, his race, and his God.

XIX.

THE TRUE FUNCTION OF A NORMAL SCHOOL.

EMPIRICAL methodology binds the teacher down and makes him a pedant; philosophical methodology, especially if enriched with the history of education, gives him the freedom and liberty of the spirit.

S. S. LAURIE.

THE average teacher stops growing within a short period after achieving fair success — three to five years being the ordinary limit fixed. The teacher educated at a normal school is more likely to continue growing throughout the entire career.

WILLIAM T. HARRIS.

THERE is in the teacher's profession the same difference which is observable in all other human employments between the skilled and the unskilled practitioner, and that difference depends, in a large measure, on a knowledge of the best rules and methods which have to be used and the principles which underlie and justify these rules.

J. G. FITCH.

THAT every normal school should have a model and training school has long since been established by law in Germany, and is no longer a question of debate. As the late Director Kehr said: "A normal school without a training school would be like a swimming school without water."

CHARLES DE GARMO.

XIX.

THE TRUE FUNCTION OF A NORMAL SCHOOL.[1]

Many of the questions now stirring the educational world must be worked through to the end in the normal school.

—THOMAS B. STOCKWELL.

IN this paper the term "normal school" is used as a generic term, applicable to that class of schools in America in which teachers are trained. The specific work of any particular school must be determined by any peculiar circumstances that condition its activities. The discussion undertaken in this case is limited to American schools.

The plan of the essay is as follows: An introductory sketch is given of the *tout ensemble* of educational agencies in order to bring into bold relief the work of the school-teacher.

Next, with a view of showing the function of the normal school, an outline of study is given, a plan of a training-school sketched, the special function of the school in relation to the profession is set forth, and some considerations are offered against the prevailing custom of doing so much academic work.

Owing to the peculiar structure of our government we have no national system of education, such as obtains in Prussia. Each State has its own system,

[1] Prize Essay. Award of the American Institute of Instruction, 1885.

and these are by no means alike. It is consequently impossible to speak of the American system of education except by way of accommodation, and then only in general terms.

GENERAL SURVEY.

The active agencies at work to mold our national life by the instrumentality of teaching, and which are immediately affected by the normal school, are the following : —

1. The family. The child's first teacher is the mother; his first school, the nursery. The atmosphere of the home life is a most potent factor in molding the child's character. All of our youth must graduate from the home into the school, where their career will be largely determined by the influence of the home.

2. The idea now widely obtains that it is necessary for every State to provide the rudiments of education for the whole body of children of school age. The Republic, because it is a republic, — a government of the people and by the people, — must, as a matter of self-preservation, see to it that the essentials of good citizenship, intelligence, and civic virtue shall be universally diffused. To secure this the State establishes and maintains at public expense free schools, open to all. These schools comprise the district (chiefly ungraded), the primary, and the grammar schools. There are also many private schools of corresponding grades.

The two specific ends aimed at in the common school should be the awakening of the faculties and the impartation of that knowledge that will be of the most practical utility. The pupils are to be trained for freedom and for usefulness. Every child is to become a producer, and not a pauper; a law-abiding citizen, and not a criminal; a respectable member of society, and not a tramp; an intelligent voter, and not a tool for demagogues; a patriot, and not a partisan.

There is a growing sentiment that the work of the common school should be made in the highest degree practical. It does not and can not impart a liberal education. It aims at immediate practical results, rather than at culture. The mass of those who receive its benefits go no further in their studies, but enter at once upon life's duties, which means in too many cases a mere struggle for existence. There are many advocates of some sort of industrial training in connection with the public schools, to take the place, in some degree at least, of the old system of apprenticeship, which will give to the laboring classes something of skill and so relieve their toil and break their bondage. Competition, which naturally increases with the growth of the population; division of labor resulting from the growing complexity of our civilization and the tyranny of trades unions dominated largely by foreigners, many of whom have had a technical education abroad, would seem to necessitate some practical enlargement or addition to our present educational agencies for the masses.

It should not be forgotten, however, that the higher grades of schools, soon to be mentioned, are largely recruited from the district and grammar schools. The seeds of culture sown there are to reach their maturity in the university. The door of every country schoolhouse should open towards the college.

The work of the common school is characterized by its elementary nature, its thoroughness and practicalness. The administration of a firm and wise discipline, the inculcation of good principles, the formation of correct habits, the awakening of a lofty ideal of life and duty, and the development of a manly character, as well as the awakening of mind and the imparting of knowledge, enter into the responsible duties of the common-school teacher. The far-reaching results that must flow from the common-school work lend to it great dignity and importance. The qualities requisite in a common-school teacher are good natural endowments, an established character, a mastery of the subjects to be taught, skill in governing, aptness in teaching.

3. Next above the schools just described are a group of those that may be called secondary. They are the high schools, academies, seminaries, and private fitting-schools. Receiving its pupils from the grammar schools, the high school attempts to do a threefold work. First, to complete the task of fitting the student for the duties of life by giving him an acquaintance with the elements of the natural sciences, especially in their relation to the arts and

trades. Its mathematical drill extends to algebra, geometry, and surveying. Second, it seeks to impart something of liberality to the culture by giving its students a knowledge of rhetoric, literature, history, English composition, etc. And third, it seeks to give to those who desire to pursue a college course a preparation that will fit them to do so with ease and profit.

There are several open questions in relation to the high school; for example, How can the course be modified so as to meet the varying wants of the pupils? In some cases the high school already embraces at least three so-called departments: a boys' English department, a girls' English department, and a classical department. Should the industrial idea prevail it may be forced to still further differentiate its work. Another question is in regard to the enlargement of the course, so as to enable those who cannot pursue a college course to receive in the high school as near an equivalent therefor as possible. Still another of great moment is the adjustment of the high-school work to that of the college.

It is very evident that the requirements for those competent to fill chairs in these schools must increase more and more. Broader scholarship, riper experience, and greater weight of character must be combined with practical skill and knowledge of life.

4. The colleges constitute a third grade of schools. These embrace a wide range of diverse institutions, some founded and maintained by the State, others

established by private munificence. Many of them are scarcely more than high schools or academies; others — like Johns Hopkins — are universities.

The most marked feature in the present status of the older and stronger colleges is their development into universities, giving greater liberty of choice and larger range of studies. The methods of teaching are correspondingly changing. Original research, lecturing, and laboratory work are increasingly important.

5. Last of all, and completing the chain, are the various technical schools, each designed to train students to excel in some chosen calling or profession. The law, medical, and theological schools, the military and naval academies, the art schools and schools of technology, aim to give a minimum of general culture and a maximum of special instruction. The special fitness of a teacher for these schools is his grasp of the science and mastery of the technique or art of his calling.

CONCLUSIONS FROM ABOVE SURVEY.

The most obvious suggestions arising from this hasty survey of our educational agencies are the following: —

1. Education is a very complex process and involves the coöperation of very diverse agencies.

2. All these agencies — home, school, college, university — are parts of a great scheme, all working toward a common end, — to fit men and women

for life in general and the individual for his particular sphere. They constitute a solidarity, and what affects one affects all. They act and react upon each other.

3. There is a vast aggregate (say three hundred thousand) of men and women who may be classed as public teachers — those who give their time and energies wholly or chiefly to this work. With the enormous growth of our population this number is steadily increasing.

4. There is a rapid increase in the proportion of female teachers. In a prominent western city (small) almost every teacher is a woman. The great mass of normal-school pupils are women. In thousands of cases the only school training ever received is from women, and very frequently they themselves have never been taught by men.

5. The most momentous question which now confronts the American people is that of public education. All other considerations are subordinate to this. The nation is committing its very existence, as well as its highest weal, into the hands of its school-teachers. These considerations lead naturally to the discussion of the question of the true function of the normal school.

The vast and increasing number of persons demanded as teachers in our public and private schools, and the wide influence exerted by them, call for careful consideration of the means for securing those best qualified for teaching. In the opinion of very many the normal school is the best agency

yet devised for fitting teachers for their especial work. What, then, is the true function of the normal school? The general reply is at hand: the normal is a professional school whose distinctive work is to prepare men and women to teach.

COURSE OF PROFESSIONAL STUDY.

But the question demands a more specific answer, which will be furnished in part by outlining a course of study, which, subject to modifications, would best meet the wants of candidates for the profession of teaching.

Anthropology. The teacher's business is to care for, develop, train, and instruct children and youth. That which underlies all his work and renders any intelligent performance of his duties possible is a knowledge of the child-nature.

1. He needs to know physiology. Education necessarily has to do largely with the body. Not only is the ideal goal, *sana mens in sano corpore*, but all the processes of mental and moral culture are dependent upon physical conditions. The teacher needs a thorough knowledge of the structure of the body and of the laws of hygiene. The questions of ventilation, heat, exercise, overwork, recreation, are so vital that nothing save careful, special investigation of them in their direct practical relation to school teaching can insure even an ordinary regard for the pupils' physical well-being.

If any other considerations are needed to enforce

this requirement they may be found in the fact that many of the simplest laws of hygiene are constantly violated in schools of all grades, and that school life, which should result in physical robustness, produces multitudes of physical wrecks.

2. The teacher needs to know psychology. The watchmaker must know the internal structure of the watch; the engineer, that of the engine. So the teacher needs to be especially versed in the mental constitution. Teaching, whether regarded as a process of drawing out the intellectual powers or as imparting knowledge, is conditioned upon the laws of mental growth and assimilation. No teaching can be successful that does not comply with these laws. There may be good teachers who have never made a formal study of psychology apart from their observations upon their scholars and their unsystematic reflections upon the facts observed. A careful study of the science of the mind before entering upon the work would, however, have greatly facilitated it, saved them from mistakes, and spared their pupils the inconvenience, and oftentimes injury, of being experimented upon. The human mind has a very complex organization, and the laws of its development can be understood only by careful study. The special fitness of particular studies for the training of mental powers is apparent only by surveying the powers to be developed in close connection with the studies designed to develop them.

The remedy for the one-sidedness of education, resulting from the too common method of cramming

the memory, can only be found by such a study of the human mind as will bring into bold relief the various powers — perception, memory, imagination, the thinking and reasoning faculties in their mutual relations.

3. The course should include a study of the ethical nature. The human being is capable of the most varied affections, appetites, desires, emotions, etc. He has a conscience and a will. His happiness and his usefulness depend upon the proper unfolding of these powers. He is to grow up, not to a life of selfish indulgence, but to be a member of a community, considerate of the rights of others. The teacher who would train this being for the proper performance of all his social duties and the enjoyment of all his privileges, must make a careful study of the laws of his moral growth, strive to form correct habits, and to unfold a high order of moral character.

His study of ethics may include also an investigation into that body of accepted moral truth recognized by all as essential to the regulation of mutual intercourse in society.

The teacher is to influence his pupils chiefly by moral power, the plying of right motives. He will be greatly aided in this by a study of the child's heart and an examination of the fundamental principles of right government.

4. This group of studies pertaining to man is not complete without logic. This is essentially psychological. The laws of right thinking are quite as

important as the laws of right feeling. The highest outcome of intellectual education on its practical side is the power to think profoundly and with ease and pleasure. To analyze, compare, reason, form just judgments, enter largely into the practical duties of life. There may be correct thinking without the study of formal logic, just as there may be correct speaking without formal grammar, and elegant expression without rhetoric. But grammar and rhetoric are acknowledged to be in a high degree helpful, when properly studied, to a correct and elegant use of the mother-tongue. So logic, both as a science and an art, may be so taught as to greatly aid in securing skill in detecting fallacy and error, in investigating truth, and in properly arranging thoughts for the greatest effectiveness.

A special reason for teaching logic in normal schools is its relation to methods. The proper division, arrangement, classification, and presentation of a subject are simply so many forms of applied logic. The suitable teaching of every subject, the definitions in geography, the inductions in natural science, deductions in geometry, analyses of sentences in grammar, examination of literature, construction of essays, all depend upon a practical knowledge of correct thinking, or logic.

These anthropological studies that have been named as the basis of a normal-school curriculum might be supplemented in advanced courses by inquiries into ethnology and sociology, and whatever else would throw light upon man as an educable being. These

studies pertaining to man are pursued in all colleges and many high schools. But instruction in them in the normal school should be thorough, comprehensive, and with constant reference to their pedagogical bearing.

If those who enter the normal school could be thoroughly well informed in the facts of physiology, psychology, ethics, and logic, as a condition of entrance, it would be all the better for them; the time could be spent in exhibiting the significance and use of those facts in the work of education.

PEDAGOGY.

This group of studies should be followed by another, which may be termed pedagogical. This consists of: —

I. *An inquiry into the philosophy of education.* Education, considered as development, is simply evolution, or an unfolding to maturity of activity and strength of all the powers of the human being. It differs from evolution in matter, as in the tree or animal, in this: in man it is the result of conscious effort on the part of the individual. All psychological growth is conditioned upon exercise. All education, therefore, must be self-education. It is evolution from within. It is a process self-originated, self-directed, and terminates in self. The function of the teacher is chiefly that of supplying the external conditions for the maintenance of the native energies, the protection of them from unhealthy employment

and dissipation, and the furnishing of the opportunities for their exercise.

The child's individuality and freedom should be sacredly respected. All educational processes are to be based on a careful study not only of child-nature in general, but also of the idiosyncrasies of the individual pupil. Education seeks primarily the formation of right habits, physical, mental, and moral. Its purpose is to put the child *en rapport* with his environment, nature, society, God. Every child is a man in miniature, a possible type of the race, capable under education of attaining an exalted degree of capacity for enjoyment and power of performance. The ideal good in education is to put within the range of every individual, without regard to sex or social status, the attainment of the noblest possibilities. It is to enable each one to make the most of himself for time and for eternity.

The philosophy of education necessarily embraces such questions as physical training, college sports, and school amusements, the co-education of the sexes, industrial education, courses of study, and all other matters that pertain to the broad subject of the completest unfolding of man in his entirety, and his fullest equipment for duty and privilege here and hereafter. It sweeps the whole field of educational endeavor, public and private, in all its grades and stages; comprehends all its aims, means, motives, and agencies, and seeks to secure the highest results for all concerned.

II. *A history of education.* Much is to be learned

as to both the philosophy of education and methods of teaching by studying the systems of education that have been formulated, the theories that have been promulgated, and the methods recommended and followed by those who have wrought on this great question in past ages. Nothing, perhaps, so liberalizes the mind of the teacher as the intelligent study of the words and ways of such men as Locke, Ascham, Rousseau, Comenius, Pestalozzi, Froebel, and Spencer.

III. *Didactics, or the principles of training.* There has come to be recognized a very considerable body of principles, or first truths, regulative in their character, and very suggestive and helpful to the young pedagogue. To analyze these, discuss them, trace them in their origin, and to follow them to their practical issue, are valuable exercises. Some of these aphorisms may be instanced: —

1. Exercise is the fundamental law of growth.

2. Each faculty must be exercised in accordance with its own laws of unfolding.

3. The chief aim of all primary teaching is mental development.

4. Nothing should be done for a child that he can be led to do for himself.

5. Interest on the part of the pupil is the *sine qua non* of all satisfactory progress.

6. There is a proper order for the development of the faculties which in general statement is, first, the perceptive faculties, then the memory, power of language, imagination, and last of all, the reasoning powers.

7. The studies to be taught should be chosen with reference to especial ends.

8. They should be adapted to the age and attainments of the pupil.

9. In the early stages of a liberal education the studies are chiefly disciplinary, and teachers should so use them. All should be so correlated, however, that one will lead naturally to another, and together they should form a system.

10. In the later stages of education, whether long or short, some reference should be had in selecting the studies to be pursued to the future occupation of the student.

IV. *Methodology.* Didactics has to do with training or development, while methodology investigates the laws of instruction, or impartation of knowledge. Didactics discusses the laws of growth; methodology, the laws of unfolding truth. Didactics has to do with mind; methodology, with matter. Didactics is concerned with drawing out; methodology, with putting in. They often run parallel, and are sometimes confounded, yet they are really distinct in their province of inquiry, separate in thought, and should be discussed apart. Methodology includes a discussion of isolated principles, or fundamental truths, and also of the systems founded upon them. Among the subjects treated under methodology may be mentioned: —

1. The kindergarten. This is really a system or method devised by Froebel to initiate in the mother's arms, and in the nursery, the work of child culture.

2. Objective teaching. The first stages of all education should be experimental. When the child has acquired the power of gaining knowledge readily and accurately without helps, then objects hinder instead of aid.

3. The topical method of presentation is to be followed as soon as the attainments of the pupil will justify it.

4. The art of questioning constitutes a very important element in all methods of instruction where recitation is used.

5. Analysis and synthesis, induction and deduction, the study of words and the study of things, thought and expression, knowing and doing, memory and reason, should as far as possible go hand in hand. They should never be violently severed.

6. The text (or reference) book and oral teaching should supplement each other.

7. For the higher grades of instruction the lecture system has special advantages.

8. Laboratories, apparatus, and illustrative museums are helpful in all stages of instruction.

9. The pupil is to be incited at every stage of his progress to independent research, observation, experiment, verification, thought, etc.

10. In general, we are to proceed from the concrete to the abstract, simple to complex, the part to the whole, and *vice versa*, and from known to unknown.

V. *Methods.* After this general survey of methodology, or rather in connection with it, instruction should be given in the method of teaching special

subjects, such as form, color, size, weight, number, place, time, and language, to young children: reading, writing, spelling, drawing, plants and animals, to those older: arithmetic, grammar, rhetoric, geography, literature, history, the natural sciences, etc., to advanced pupils.

While it may be that there is no one method to be followed in teaching any subject, every subject is best taught by a method, and he is most likely to find the best method who diligently and intelligently seeks for it.

VI. *School economy.* The student who has a clear idea of the nature of the being to be educated, and the character and method of the education, is prepared to consider the organization of the school, the making of a programme, the keeping of records, the administration of discipline, the legal rights and limitations of the teacher. For an advanced grade of students it would be proper to discuss the building and furnishing of schoolhouses; heating, lighting, and ventilating; duties of school officers, including superintendents; the grading of schools, school systems, etc. In short, whatever pertains to the administration of our complex school system would furnish suitable topics for this course.

Before leaving this branch of my theme let me say that it would not be necessary, or even desirable, perhaps, that each class should pursue this entire course. It would be sufficient if the normal schools could give such instructions in the great fundamentals as would set students thinking, and so teach them

that in all these questions they would be likely to reach right conclusions. Thus their influence could not fail to be profound, far-reaching, and healthful. It would eventually pervade the entire teaching force of the country.

It will thus be seen that great stress is laid upon the thought that one great function of the normal school is to formulate a body of educational doctrine. Perhaps nowhere more than in teaching is seen the power of truth. Any reforms in educational ideas or methods become effective only when they become controlling forces in the teachers. At no time are teachers so impressible, so open to receive truth, as during that formative period of preparation when they give themselves up to be taught. When rightly taught as above they will be aggressive, independent, and wisely conservative.

It is worthy of especial consideration that the problem of education, while old and involving invariable elements, is essentially a new problem, to be worked out by each new generation in its own way. On its practical side education is the training of the individual for citizenship; that is, for the successful discharge of the particular duties of his special station in life. But a man's duties are determined by his environment; that is, by the demands of the ever-changing civilization amidst whose influences he lives and labors.

Educational doctrine must embrace not only the unchangeable element of man's nature, but also the changeable elements of the life of which he makes a

part; and normal schools must recognize these truths in their teaching.

PRACTICE SCHOOLS.

Along with this professional instruction the work of next highest importance to be done by the normal school is to train its pupils in the actual work of teaching. There is a science of teaching, and any person will be a better teacher if, before entering upon his work, he masters at least the rudiments of that science. The more familiar he is with these elements, the more easily can he apply them in his work in the schoolroom.

But teaching is no less an art in which the highest success is attainable only through practice. Experience is the verifying process that must make evident to him the truth of his philosophy. Under a wise system of teaching under criticism pupils may very greatly expedite the matter of acquiring both experience and skill. A student is better prepared for the independent work of the schoolroom by even a few weeks' preliminary handling of classes. As difficulties and perplexities occur they are referred to the master for solution, mistakes are corrected, and excellences are acknowledged and commended. By this means it should be noted that the schools would not only be saved in a measure from the blunders of inexperienced teachers, but, what is a matter of the highest importance, they would be permanently spared the infliction of those who by this testing process are found wanting in the essential elements of

success as teachers, and are refused certificates, and advised to seek other callings.

How the normal school shall supply the need of training, and so fulfil this important function, is a mooted question. Several methods are followed. One is to allow the undergraduates, or pupil-teachers, to teach under the eye of a head teacher, who has the chief responsibility for the discipline and progress of the class. Another is to assign pupil-teachers to particular classes for definite periods of say ten weeks, and hold them responsible for arranging the work, instructing the classes, and maintaining discipline. Their work is frequently inspected by their appointed critics, and their failures and successes are pointed out. This system varies widely in some of its details. For example, in some schools no teaching is done until the pupil has finished his professional studies. In others the study of method and practice in teaching go together. Another method, wholly distinct from this, is to call upon the pupils, each in his turn, to teach his own class.

It is not my purpose here to criticize these various plans. It is sufficient to say that in my judgment, formed after a somewhat varied experience and wide observation, a practice school is an essential factor in a complete normal school; that pupil-teachers derive an invaluable experience by teaching veritable children, and actually exercising authority for a continuous series of months; and that under proper supervision this can be done without detriment to the children.

THE MODEL SCHOOL.

A third great part of normal-school work is to embody and exhibit the highest type of a school. It should be a model school. The grounds, buildings, furnishings, apparatus, cabinets, libraries, the classification, instruction, and discipline, should be of the highest order. The faculty should represent the last best word in the educational world, be ever on the alert to catch the newest theory, and to adopt and hold fast that which is good. The school, in order that it may be a complete object-lesson, should embrace the kindergarten, the primary, intermediate, grammar, and high school grades. There are several reasons for such a school. First, it is a complement to the philosophic ideal, showing that what ought to be may be. Second, it enables the pupil-teachers to become familiar, by actual participation in the daily life of such a school, with the best principles of government and methods of teaching. Third, such a school is an object-lesson of great value to the general public, putting before them in concrete and impressive form the new education.

CHARACTER BUILDING.

The great fact should not be overlooked that the normal school is, first of all, a school, a seminary of learning not only, but a place for character building. It is so to train the pupils — the future teachers — as to repress the evil and foster the good in their lives; to form habits of system, punctuality, industry,

self-control, independence, thoughtfulness, moral earnestness, etc., so that they shall be prepared to teach by example as well as by precept, by their lives as well as by their words.

The most forceful fact in the teacher's work is his personal character. What he is, what he loves, what his ideals are, what he thinks, by what motives he is governed, what company he keeps, what books he reads, even what his amusements are, all enter vitally into his work as a fashioner of youthful minds and manners. The normal school, by wise methods, inculcates noble principles, holds up for imitation the best examples of the teacher, and strives to create in the minds of its pupils an ideal of the schoolmaster toward which they are ever to aim.

A PROFESSIONAL SPIRIT.

Even a cursory glance at the relation which teaching sustains to the well-being of humanity and the progress of the race in all that is good in personal character, domestic and social life, art, science, industry, government, philosophy, and religion, shows that it ranks along with the highest of human callings. Luther said, "If I were not a preacher, I would be a teacher." Teaching should stand high among the professions. It should be rigorous in its exactions of the requirements of those who seek to enter it, lay special stress upon character, learning, and largeness of soul, and jealously exclude the unworthy and the incompetent. It should allure

to its ranks the noblest spirits by offering the best facilities for the prosecution of their chosen work, suitable recompense for faithful service, social recognition, and a reasonable certainty of fixed tenure of office so long as the work is efficiently performed.

Normal schools, properly equipped and ably managed, having before them the one distinct object of training men and women for this high office, do by their very existence call attention to the difficulty, importance, and dignity of the profession. By the philosophy which they teach, the methods they pursue, the standard of requirement for admission, the elimination of the incompetent, the dismissal of the unworthy, and especially by constantly adding to the number of those thoroughly fitted for good service, the normal school awakens a professional spirit — a philosophic, philanthropic, patriotic spirit — in those who give themselves to this high calling, not as a means of livelihood, a *dernier ressort*, but as to a noble lifework, to which they may worthily devote all their energies and attainments.

THE PROCESS OF EDUCATION IDENTICAL.

Much mischief has resulted from violently separating education into distinct stages. The process of education is an identical one, the same throughout all its progress from the cradle to the college. It is the same mind taking its initiative lessons as it learns to recognize its mother's smile, which later pursues its investigations by peering into the heavens through

the telescope, deciphers monumental inscriptions, or searches into the deep things of religion. The same laws govern its growth and acquisitions throughout. The philosophy of education embraces the whole scheme of psychical evolution, and recognizes it as subject to the same general laws of didactics and methodology. Formerly it seemed to be thought that any one could teach children, and that without special preparation. Now the drift of public sentiment seems to be that only primary teachers need a professional training.

PROFESSIONAL TRAINING FOR ALL TEACHERS.

The truth seems to be that, in order to attain the highest results, all who teach, whether in the home, the school, or the college, need a special training for the work. The lecturer in the university, the professor in the college, the teacher in the high school, no less than the grammar master, the primary instructor, and the kindergartner, require not simply culture, education, but pedagogical training.

A very important part of the normal-school work is to train men and women for all grades of school teaching, especially the higher grades. Any one at all familiar with the work of high schools knows that much of the teaching in them is very faulty. Worse teaching than is done in some of the high schools and academies is, perhaps, nowhere to be found, unless it be in some of the colleges. Many a college graduate goes haltingly through life, simply because his instructors were ignorant or negligent of their work

as teachers. Normal-school training that would serve to improve the work done in many of the colleges would be a national benefit. Besides this, the universities and colleges are the centres of thought, and the educational ideas and methods that obtain in them will be dominant over all those who come under their influence. If those who are to teach there could have a special pedagogical training for their work, the influence of both their example and precept would be immediate and profound in developing a professional spirit. The young men aspiring to positions as teachers in high schools, academies, normal and grammar schools — all of whom should be college bred — would be influenced to seek a normal training. The mass of teachers for country schools must come from secondary schools. If these were taught by professional teachers we should at once have a class of men and women imbued with a professional spirit. The influence of college and high school would thus be enlisted on the side of normal schools, instead of being indifferent or hostile.

West Point trains men not simply to act as second lieutenants or captains of companies, but also as colonels of regiments, brigade, division, and corps commanders, and as generals-in-chief to command the armies of the United States. Grant, Sherman, Sheridan, Hancock, Meade, McClellan, Thomas, were all trained in the military academy, and the history of their achievements vindicates the policy of the government. The normal school, as a professional school, should do for the teaching profession what West Point has done for the profession of arms.

The theological seminaries do not spend their strength in fitting men simply to be pastors of feeble country churches. They strive to give such a training as will fit them for the most difficult posts, where the severest demands will be made. Natural selection and the survival of the fittest do the rest. The strongest and ablest go to the front, the weaker fill the easier positions. Andover, Union, Princeton, and similar schools strive to furnish leaders, and thus to lift up the whole body of the profession. The high places demand men of professional training. The example is contagious, and few country churches are now satisfied with an untrained pastor. The theological schools begin at the top, and so reach the mass.

The normal school, as at present organized, is not doing that work. Practically it sets itself to the task of training men and women — chiefly women — for primary and grammar school work and for teaching in the rural districts. By arranging its course of study and lowering its standard of admission to accommodate those who seek to fit themselves for teachers in lower-grade schools, it practically shuts out those who have had a university course and who aspire to teach. Few of the teachers in university or high schools have ever had a professional preparation for their work, or have ever seriously thought of having such. So long as the highest places in the profession of teaching are open to and filled by unprofessional men, the profession itself must suffer from the lack in professional skill of those who have

knowledge and culture, but lack ability to train and impart.

The normal schools in America are doing a good work, and have helped to bring about a condition of things and a state of public sentiment which is already calling for something better. The establishment of chairs of pedagogy in colleges is in response to this sentiment. The point insisted upon here is that the time has come for the establishment here and there of normal schools of high grade, designed expressly and exclusively to give a strictly professional training to college graduates and others possessed of a liberal education, to fit them for the best work in teaching in high schools, academies, normal schools, colleges, and universities.

Undoubtedly one function of the normal school is to train teachers for the country schools and the lower grades of city schools; but what is here insisted on is that this is not its only or its chief work. There is the same need of professional training for teachers for the higher grades as for the lower. The conditions of teaching in the country districts are such that there is little inducement for those who have a normal training to remain there permanently. If they aspire to teach in the city they at once come into rivalry with graduates of college and high school, who, though without professional training, have the advantage of broader culture and of local influence.

In so far as normal graduates who have had only a grammar-school training before entering the normal are employed as headmasters in grammar schools,

teachers in high schools, professors in normal schools, to the exclusion of college-bred men and women, it may well be questioned whether more harm than good may not ultimately result. Technical training cannot take the place of scholarship. Breadth is indispensable to the highest culture, and should be required of every teacher of high grade. The normal school is not to displace the college and the high school, nor to rival them, but to supplement their work; not to substitute technical training for scholarship, but to add to culture the best professional training.

ACADEMIC WORK.

A large part of the strength of normal schools is spent in giving their pupils the rudiments of the common-school studies. They do academic instead of professional work. Against this policy it may be urged that it is a waste of resources. The normal schools are required to do what the grammar and high schools should do. It creates rivalry and jealousy between the normal and high schools. It degrades the normal from a professional to a secondary school, thus helping to defeat its own end — the creating of a professional spirit. It fatally lowers the standard of attainment that should be required of every teacher. It overcrowds the course of study, and, by attempting to teach both matter and method, does neither with thoroughness. It attempts the impossible. Students need more culture and discipline than are now required upon entering normal

schools, and the separation of matter and method before they can fully grasp the significance of methodology.

A complete separation of matter and method, a thorough differentiation of the normal school into that of a strictly professional school, would, it is believed, be productive of the following results: The normal schools would at once take higher rank and compel greater respect. The ranks of college and high-school teachers and grammar masters would be more largely recruited from the normal graduates. The professional work would be better done. Normal-school teachers would turn their energies toward producing pedagogical literature rather than schoolbooks. Normal students would go out with more clearly defined notions of what constitutes professional training than they now possess. The antagonism between high school and normal school would at once cease.

It is worthy of note that in the early educational history of this country the great institutions of learning were designed as theological schools, and their work was miscellaneous and elementary. By a natural process of evolution and differentiation, the academy, the college, and the university have grown out of the divinity school. The divinity school proper, now leaving to these the work of general culture, seeks to do strictly professional, post-graduate work.

The normal school is undergoing something of the same healthy metamorphosis. The improvement and multiplication of the schools of all grades where those who wish to teach can receive the requisite

instruction in the subjects to be taught, and the growing public sentiment, or rather demand, for a higher order of professional training, unite in rendering it possible and desirable for the normal school to do distinctively and exclusively professional work.

CONSERVATIVE CHANGES.

Of course no radical revolutionary change should be suddenly introduced. That here suggested should be gradual. One such school might be enough to start with. It would be soon followed by others.

For the present, under the traditions of the normal schools, and with public sentiment as it now is, they will be obliged to do academic work. But it should be done under protest, and with a constant aim at realizing the true ideal of the normal school as an institution of high order, graded to meet the necessities of persons of varied ability, taste, and destiny, admitting only those whose scholastic attainments warrant it, and giving to them the broadest and most thorough professional culture possible, and so recruiting all grades of the profession of teaching with those who will give it dignity and do for the public the best kind of work.

It is absolutely necessary that those who teach should be well grounded in the studies required in the schools in which they teach; and if those who enter the normal school are found deficient in these studies it will be necessary for some time to come, as it has been in the past, to provide some means for

a thorough review. Where there is a well-organized practice school the academic work can be done there. In some cases a preparatory department may be maintained; in others the normal faculty must do this work. But so far as possible it should be separate from the professional work, and should be distinctively and professedly academic, with stress laid upon the fact that the work is extra normal and temporary.

SUMMARY.

To sum up, the normal school is a professional school, and ranks with the theological seminary, law school, medical school, and military academy. Its place is that of a post-graduate school. Admission should be limited to those who have completed their academic or scholastic work. Its spirit, methods, equipment, and teaching force should be of the highest order. Its instruction should be confined to those subjects which sustain the most intimate relation to the peculiar work of the teacher. Its great function is to add constantly to the number of those who dedicate themselves to teaching as a lifework, and who seek to become, by personal character, scholarship, and pedagogical skill, able to do the best kind of work in whatever sphere of teaching they enter, whether in the kindergarten, the grammar, high school, college, or professional school. It should seek, by concentration of energy upon strictly professional work, to touch the profession at every point and vitalize and ennoble it in every part.

XX.

ADVICE TO YOUNG TEACHERS.[1]

[1] The following series of familiar "talks" in the form "Advice to Young Teachers" will, it is hoped, be of practical help to young teachers about entering upon their work. Students who have graduated from the Rhode Island Normal School in the classes from 1884 to 1889 will recognize here the substance of addresses given to their respective classes at graduation.

MAN, it is within yourself, it is in the inner sense of your power, that resides nature's instrument for your development.

PESTALOZZI.

THE price of retaining what we know is always to seek to know more. We preserve our learning and mental power only by increasing them.

HENRY DARLING.

IN fact, what we learn at school and in college is but the foundation of the great work of self-instruction and mutual instruction with which the real education of life begins when what is commonly called the education is finished.

EDWARD EVERETT.

PATIENCE, diligence, quiet, and unfatigued perseverance, industry, regularity, and economy of time, as these are the dispositions I would labor to excite, so these are the qualities I would warmly commend.

HANNAH MORE.

WHATEVER I have tried to do in life, I have tried with all my heart to do well.

CHARLES DICKENS.

XX.

ADVICE TO YOUNG TEACHERS.

It is the man who takes in who can give out. The man who does not do the one soon takes to spinning his own fancies out of his interior, like a spider, and he snares himself at last as well as his victims. — DR. JOHN BROWN.

THE TEACHER'S CALLING.

AN aimless life is an empty life. He only lives who sets before himself a high and noble purpose, and then with resolute endeavor girds himself for the great struggle, counting all toil light and all sacrifice easy if he but win the crown.

In what nobler calling could you engage than in teaching? It is a work of great difficulty, calling for talents of a high order, for varied attainments, for zeal, persistence, industry, fidelity, and other high qualities of soul. It is a work whose importance cannot be stated in words. The teacher is not to be compared to the potter whose skilful hands mold the unresisting clay into wondrous shapes of symmetry and beauty; nor to the sculptor who evokes from the dead marble the statue which, though matchless in grace and dignity, is still but a lifeless thing, marred by a blow and shattered by

a stroke. It is the teacher's prerogative to deal with life, to call into exercise the manifold powers of the soul, to lead it to apprehend the marvelous beauties of this wondrous universe, to awaken thought, that the mind may rise to at least some dim consciousness of its divine origin by thinking over again the thoughts of God embodied in his universe. It is the teacher's exalted privilege to assist in training noble men and women. Kings and queens may bestow patents of nobility written upon parchments. Teachers evoke a veritable nobility of soul, which needs no outward sign. The teacher works not for time but for eternity. The noblest monuments of art perish, even the pyramids decay, and the proudest empires lose their power. But the work of the teacher, wrought upon indestructible mind, and incorporated into the very fibre of the immortal spirit, shall endure when granite mountains are worn away and the material universe itself has been dissolved.

The teacher's work, passing beyond the realm of the individual, reaches to the family, exalts and ennobles the home, pervades society with its benign influence, strengthens the foundations of the State, contributes to the glory of the nation, adds new dignity to the race whose noble deeds are in part certainly the outcome of his labors.

The teacher is the common benefactor of all classes. The success of the farmer, the skill of the artisan, the gains of the merchant, the genius of the artist, the eloquence of the orator, and the

wisdom of the statesman, each and all are enhanced by the wise training of the faithful teacher. The common-school teacher is preëminently the friend and benefactor of the common people, the industrious sons of toil upon whose labors depend the weal of society and the prosperity of the State. The common-school teacher, representing the organized effort of the Commonwealth, and the ripest results of modern scholarship, takes by the hand the child of the humblest citizen, and gives to him that training and scholarship which starts him in the race of life as a peer of the lordliest, and puts within his grasp the most coveted prizes of life. The university is a beacon light that warns of hidden rocks of communism and socialism. The common school excavates these rocks and makes of dangerous straits safe, deeply flowing channels.

In choosing the work of teaching, you have chosen that which, while affording scope for a lifetime for all that is excellent in you, will also, in so far as you open your souls to its reflex influence, continually ennoble, enrich, and beautify your own lives.

I congratulate you upon the auspicious time for entering upon your work. Even adverse criticism and fault-finding is a sign of healthy interest in popular education. Never before has there been a time when so much thought was given to this great subject. The profound quarterlies, the sprightly monthlies, the weekly journals, the daily press, the pulpit, the political parties, the state and national legislatures, besides numberless assemblies of teach-

ers, are discussing education in all its phases, while money is poured out like water for the erection of schoolhouses, the providing of apparatus, the employment of teachers, and the founding of institutions, in order that the people may share in the blessings of education. And never has there been a time when the capable, faithful teacher was so sure of complete recognition and generous reward as now. The future is full of promise. I congratulate you upon entering upon such a work at such a time.

THE NEW AND THE OLD.

You are about to enter upon your work in the midst of a good deal of turmoil in the educational world. The air is heavy with discussions; there is a sharp conflict of ideas. Much is said in favor of the new education; and the old education has its earnest advocates. There is much that is vague and misty in this discussion. Precisely what is meant by the new education is not clearly understood. Some understand the term new education to mean the teaching of physical science; some the kindergarten; some the so-called natural method; some the common-school system, and some identify the new education with the teachings and practices of the late superintendent at Quincy. Without entering into this controversy, it is sufficient to say that there are two pretty clearly marked parties — the conservatives and the radicals. There are those who cling to the old as the *ne plus ultra* of human

endeavor. They regard all change as revolutionary and treasonable. The other party discard the old because it is old, and welcome the new because it is new.

You are not called upon to take sides with either of these parties. Nor are you to be indifferent to both. The extremists of both parties are wrong. You are to accept that which is true and follow that which is best, whether in the new or in the old. The subject of education is not a new subject. It is as old as the human race. It has claimed the attention of great thinkers, and engaged the highest activities of great teachers in all ages. Plato and Quintilian among the ancient, Locke, Comenius, Pestalozzi, and Froebel among later writers, have grappled with the question philosophically, while every age has had its systems of instruction. The schools of the prophets founded by Samuel, three thousand years ago; the schools that have always followed in the wake of Christianity; the schools organized by Charlemagne; the network of tuition thrown by the Jesuits over all Europe; the great universities of England and the Continent; the system of popular instruction devised by our fathers, have each had their peculiar excellences, and accomplished for the race, in their day, much that is admirable and enduring. The teacher should be a student of history. The historic spirit is a conservative spirit. We are to conserve the true and the good. It was not without wisdom that our fathers planted the elms that have weathered the

blasts of centuries, and in whose grateful shade we sit to-day. They are a heritage from the past to be cherished and loved and venerated. Nothing in modern times surpasses in massive endurance the pyramids of Egypt; while the matchless beauty of the old Greek temple is the consummation of art. In education we are debtors to the past, and our highest wisdom lies in the reverent study of the educational theories and practices handed down to us from other generations. Antiquity lends an added charm to whatever is true and beautiful and good in art, culture, or religion.

On the other hand, the changed conditions of modern life, the new systems of science and philosophy, the constant efforts made to bring within the reach of the many the results of the investigations and studies of the few, necessitate a remodeling of our systems of education, a reconstruction of our courses of study, and an improvement in our methods of instruction.

INDEPENDENCE.

You are not to be imitators and copyists. Teaching is not a trade that can be taught by rule. You will not succeed in your work by simply doing as you have seen others do. Be yourselves; study the minds and dispositions and surroundings of those whom you are to train; make yourselves masters of the subjects you are to teach; form for yourselves methods of teaching of your own, and devise your own systems of government, and then, with reverent

regard for truth and excellence, whether old or new, do that which seems best to you. With no spirit of bravado or irreverence, and no assumption of superiority, but with a spirit of humility and meekness, seek industriously for the truth, and when you find it pursue it. Progress of any kind in human society is only possible as the result of independent thinking, and action based on that thought. The spirit of the new education is a spirit of freedom, of liberty, of progress. Call no man master; be slaves to no system; follow blindly no method. Be studious, thoughtful, industrious, true to your convictions and faithful to duty.

THE SIGNIFICANCE OF DIFFICULTIES.

In the course of your work you will doubtless meet with difficulties and discouragements, and your spirits will sometimes not be as buoyant as to-day. If at such times you should be tempted to despond, remember that trials are incident to life. No one escapes. They belong to life as life. They are a part of our discipline. The soul seems to need them as indispensable means for its own development. Recall that maxim with which you have become so familiar — "Exercise is the law of growth." Some of the noblest powers of the soul are called into exercise only by the emergencies of life. The true greatness of the soul is made manifest by its manner of meeting trials. It required banishment and exile

to reveal the transcendent glory of the character of Roger Williams. The greatness of Lincoln could only be measured by the vastness of the difficulties he met and overcame. One of the chief glories of life is in bearing bravely its trials. The electric lights that flash out from the Brooklyn bridge dazzle by their brilliancy, but it is the strength of the massive granite piers upon which the vast structure depends for its great utility. Sweet indeed are the uses of adversity, if rightly improved. Patience, resignation, fortitude, courage, hope, industry, are some of the high qualities of soul that can only flourish under trial. Poverty is not to be despised, labor is not a curse, defeat is often only a larger victory in disguise.

If you should be tempted to think your trials peculiar, remember that this is only because you yourselves are peculiar. No soul is like another. Every life is peculiar. The heart knoweth its own bitterness. Strive to show yourselves peculiar in the heroism with which your trials are borne. Gladstone the Premier was great when bearing upon his Atlantean shoulders the burdens of an empire. Gladstone the citizen is no less great in the equanimity with which he bears defeat.

Wealth, luxury, ease, leisure, are very doubtful blessings. They are seldom accompanied with happiness, and certainly not always with goodness. The chief if not the only value of money is that the responsibility for its care, safety, and right use call for the exercise of high qualities of soul. Its

responsibilities are fully commensurate with its pleasures. It corrupts and degrades quite as many as it ennobles. Wealth is simply opportunity. Its value depends upon its use.

> Verily,
> I swear, 't is better to be lowly born
> And range with humble livers in content,
> Than to be perk'd up in a glistering grief,
> And wear a golden sorrow.

Trials are but opportunities. Yielded to, they enslave and crush us; conquered, they crown us kings.

Strive then, dear friends, to make the most of every day. Get good from everything. Be cheerful and hopeful.

> Let all the ends thou aim'st at be thy country's,
> Thy God's, and truth's.

And may He whose kindly watchcare has brought us all safely to this glad hour of your graduation, keep you to the end of life's journey, grant you all the success that you can endure, and sanctify to you whatever of trial you may be called to undergo.

INDEPENDENT THINKING.

THE truth presses itself upon me with great emphasis that the controlling forces of life are not words, nor anything else that comes from without. The secret springs of life lie within us. Your work,

your failures, your successes, will be determined very little by what may be said to you by others. Words will have less and less weight.

Your course will be determined far less by what you hear than by what you think. Words are but symbols, thoughts are powers. Not other people's but your own thoughts are the great forces that will mold your lives. The perplexing questions that will confront you are to be thought out. Life's problems are genuine test examples. They are unclassified, accompanied by no rules, and have no answers. There is no "Teacher's Edition" to be had at any price. In solving them you can have little or no help from either books or friends. For this test cramming will not avail, tears will not help you, no favoritism will be shown, and no mistakes will be made in the marking. Although cheating may seem to be helpful for a time, yet in the long run the only thing that will be found truly serviceable to you will be downright honest, patient, persistent, careful thinking. The one great power on which we must chiefly rely in the shaping of our lives is the power to think. That godlike gift, by virtue of which we grasp rugged facts in their relations and principles, trace effects to their remote and hidden causes, and see at a glance the far-reaching and diversified results of present agencies, enabling us to shape our action by immutable law and unchanging principles, and to have a valid reason for everything we do, is the crowning glory of our being.

You will be compelled to do your own thinking. No one will or can do it for you. Even when you consult authorities it will be well to be able to go behind opinions to the reasons, and below these to the primal facts on which they rest. You must work your own way out of darkness into light. Sunshine dispels darkness; water quenches fire; winds drive away fogs; so thought clears away doubt, refreshes the mind, and makes clear the line of action. If you have not learned to think you will be like children crying in the dark; or like sheep driven to the market; or like slaves subject to your masters. You will be like ciphers occupying vacant places, until the significant figure, whose place you temporarily fill, comes to claim it for himself. But if you have learned to do your own thinking, and a little meanwhile for other people, we may bid you godspeed, and safely predict for you a career of usefulness and honor in any sphere suited to your capacities and attainments.

You have heard much of methods, but there is no regal method except the method of rational thinking. To do the right thing at the right time and in the right way — this is the substance of method; and the secret of it cannot be formulated, much less communicated; it cannot be learned, but it is to be thought out.

You have heard much in advocacy of reading, but it is better to think than to read. Reading without thinking is a sort of mental dissipation. The demand of the hour is for teachers' thinking circles. Think-

ing transmutes reading into knowledge, knowledge into science, science into culture, culture into character, and the whole into power.

Cultivate the habit of thoughtfulness. Thinking is hard work; it taxes the mind, wearies the brain, tires the body. It exhausts the energies much more than manual labor. The brain, considered as the organ of thought, is the most wonderful piece of mechanism ever wrought. Nothing less than divine wisdom could have contrived it. To use this organ is one of the highest prerogatives of man. Man is a rational animal. To think is to be man; what then is it not to think?

The motto which you have chosen is peculiarly significant. "Why, and what then?" It suggests philosophic inquiry, a search for causes and results. Nothing exists in this world without a cause. Vapors rise and snow falls. Why? Planets revolve about their sun, and suns about their centre, and everywhere in the universe is order, system, law, intelligence. Why?

To-day you finish your course of study, and we bid you farewell. "What then?" To-morrow you enter the schoolroom and stand in the presence of groups of children who will look to you for instruction, training, counsel, example. What then? In a few short years — they will seem as days — your pupils will stand before you as you now stand before me, to hear your parting words before they take their places in life as productive forces. What then? The final day will come; accounts will be

balanced; records will be made up; rewards will be distributed; you will stand looking out into that endless future whither we are all hastening. What then?

The other day I heard a teacher from a neighboring State repeating the motto of his class, adopted many years ago when he was a senior in a normal school: "Deeds not words." All these years, he said, he had tried to live up to that motto. May you live up to the spirit of yours. Ever seek to find answers to these great questions. I do not mean that you are to become philosophers at a single bound. Thought-power is of slow growth. Time and experience are requisite for its perfection. You are not necessarily to become reformers. Great thinkers who revolutionize by their thoughts are rare. One or two in a century suffices. The world has not yet embodied in deeds the ideas of its master-thinkers. Much less are you to be iconoclasts. The world is full of the treasures of thought, more precious than works of art. They are to be reverenced, loved, and protected. Seek not to destroy, but to conserve. Least of all do I counsel you to become what are styled "free thinkers." All of our thinking is limited by law and reality. He who discards these limitations is like a sea-captain who destroys his chart and compass and cuts away his rudder, in order to be free to sail the ocean at his own sweet will. Alas! he is no longer free, but is helpless, the sport of the wind and the victim of storms.

Accept the spirit of your motto, which is an

inquiring spirit, a thoughtful spirit, a philosophic spirit. Modestly, earnestly, within your own sphere, in all practical matters, in school and out, think. And so far as in you lies grapple with the great questions of the day, social, educational, political, literary, religious, and form your own independent judgments thereon. And our fervent wish for you each is that the results of what the brain thinks and the will accomplishes may be all that the heart desires.

CULTURE, CITIZENSHIP, CHARACTER.

To-day your thoughts are turned to the future, toward what may be, rather than to what has been. You are young, and your spirit is that of hope, prophecy, and endeavor, rather than of reminiscence, eulogy, and congratulation. You seem to have been unconsciously influenced by this spirit in selecting your motto, "Consider the End." You are to be enrolled with that vast body of men and women who are attempting to administer the public-school system of America. You dedicate yourselves to a great purpose. You embark in an enterprise without a parallel in the annals of the world. When before did any people ever undertake to bring the blessings of a liberal education within the reach of every boy and girl of school age, and to afford to all alike, without regard to sex, color, or class, the inestimable benefits of mental culture? The nation seeks through you and other teachers of its common schools to lift to

a high plane of independent manhood and womanhood a whole generation of its youth. This is truly a heroic endeavor worthy of those whose sublime faith in humanity has been shown in the declaration of human equality, the emancipation of a race of slaves, and the experiment of universal suffrage.

The nation whose destiny you are to help mold will number in your day one hundred million people. In extent of territory, in wealth, in population, in all the essential elements of civilization, in dignity at home and influence abroad, you will see the United States standing among the very foremost nations of the globe. Her preëminence will be acknowledged by the world. You and the thousands who, like you, now enter upon your noble lifework in the schoolroom will by your teaching help to win for the Republic that proud place.

In the attainment of this ultimate end, you and your fellow-teachers in the free schools of America are to seek to do these things : —

1. To bring about, so far as possible, a common life among our peoples. Our population comprises representatives of all nations, languages, classes, and creeds. English, Scotch, French, Germans, Irish, Italians, and Africans ; Protestants, Catholics, and atheists ; nihilists, anarchists, socialists, and communists, all are here. The children who will enter your schoolrooms will in some cases be unable to understand one another. They will represent the most violent antagonisms, political, social, and religious. When they leave your presence see to it that

they go speaking the same language, eager in the same pursuits of knowledge, loving the same institutions, loyal to the same flag, proud of the same history, and acknowledging the one God the maker of us all.

The fathers may indeed be strangers, aliens, enemies. See to it that the children shall be companions, friends, brethren.

2. Another end that you are to consider is the promotion of the intelligence of your pupils. I do not mean simply that you are to teach them the mere facts of arithmetic, grammar, and geography, but that you are to train them to form intelligent opinions on these and other subjects. Everything cannot be taught in the common schools, but children can be trained to think correctly about a great variety of things. And it is this power of thinking, of reaching right conclusions, of forming deliberate judgments, that is to be sought for in teaching. Facts are only aids to thinking. What a man thinks is vastly more important than what he knows. Knowledge is only a means to an end; wisdom is an end in itself.

I remember that I address young women. But I rejoice in the thought of that new era for women which is bursting upon us, an era symbolized by the fact that the State entrusts its destiny to women by making them almost exclusively the teachers of its common schools. To-day and here it is the privilege of women as never before and nowhere else to have opinions of their own on questions of literature,

philosophy, history, and politics, and to have a voice in molding public opinion. The girls who come to you are to be stimulated to high thinking, to intelligent participation in all the great philanthropic and moral enterprises of the day. Seek to awaken in them aspirations after the broadest culture within reach.

3. But a higher end than wisdom is good citizenship. The State has educated you with great care and at large expense, in order that you may be competent to fit its youth for the right discharge of their duties as citizens. You are to train them to be not only capable of forming right opinions on questions of public interest, but to be able and willing to discharge their public duties. They must not only know them, but must actually perform them. They must be taught not only to admire truth and virtue, but must be trained so that they will not only in ordinary but in extraordinary cases, as voters, jurors, witnesses, legislators, judges, aldermen, and congressmen, prove faithful to their trust, prefer the public weal to private gain, and hold their honor above all price. Consider good citizenship, honor, integrity, fidelity, active participancy in public affairs, shirking no duties and fulfilling all obligations, as the final end for which the State has educated you as teachers. Those who are to sit under your teaching and feel the molding power of your influence ought to go out into life better prepared for all its duties. They should be better workmen, better overseers, better husbands, and better wives. Education should touch

the mainsprings of mind and heart and will, and make itself manifest in all the relations of life. It should change the individual, the family, the Church, the State; affecting both rich and poor, capital and labor, and improve not only the opinions and social customs, but also the laws and institutions of the State, the nation, and the race.

4. Once more let me ask you to consider that the final end of all teaching is not knowledge or wisdom or conduct, but character. In considering the lives of the heroes of the past we are not satisfied with a knowledge of what they knew or thought or did. We ask, What kind of men were they? It is not the hero of many battles that we love to recall, but the man Grant, humane in battle, magnanimous in victory, undismayed by defeat, just in misfortune, patient in sickness, thoughtful for his family in the last great struggle with death. These are the high qualities of soul that touch our hearts, awaken our pride, and arouse our enthusiasm. The glory of a nation is the manhood and womanhood it produces. This is the goal toward which the family, the school, the Church, and the State all strive.

In devoting yourselves to the high calling of teaching you place yourselves in the very centres of power. In no other place can you work so effectively for humanity. Nowhere else can you, by precept and example, by teaching and by training, exert an influence in shaping the national character which will be more deeply, widely, and permanently felt than in the schoolroom. This consideration of the noble

ends of your labor may serve to stimulate you to do your best work. It will quicken you in the hour of sluggishness, sustain you in discouragement, comfort you in toil, and reward you when your work is done.

THE WORK OF THE PRIMARY TEACHER.

THE subject to which you have given much special attention is that of the primary school. You have thought and talked of the little ones, their first days at school, their first impressions, and their first lessons. The subject is one of fascinating interest and of the weightiest moment. I cannot do better, perhaps, in these last words to you as a class, than to deepen the impression already made in your minds on this great subject by suggesting some foundation thoughts.

1. That which underlies all else is the thought that the primary teacher has to do with living souls. The schoolroom is a place of life, not of death, of growth from within; and all your methods and processes are to be governed by this one supreme fact. Life has its own laws, and asserts itself in its own way. A sculptor may evoke from the marble whatsoever form he wills, because the marble is passive. The teacher is not a sculptor; he does not deal with matter, he deals with mind. He cannot shape mind as he will, but must conform to the laws of its development. He stands in the presence of a mighty force which he may hinder

indeed, but which he cannot radically change and make other than it is. Every child by virtue of his birthright is the peer of the teacher. To educate him properly he must study him thoroughly. The soul is not clay to be molded, wax to be stamped, paper to be written on, a vessel to be filled, nor even a diamond to be polished. It is a living force to be nurtured, trained, developed. It demands opportunity, conditions of growth, favorable environment. Carefully foster the growth of these living souls.

2. A second thought is that you have to do with free beings. In the primary school especially, where children seem so helpless, so plastic, so completely at the mercy of the master, we need to be on our guard lest we attempt to play the despot. We are not to rule absolutely, but to preside. Where there is life there must be liberty. Everything that the teacher does for the education of the child is conditioned upon the child's will. If he does not choose to learn, the teacher's work is vain. Compulsion is without efficacy unless it issue in choice. Spontaneity is an invariable accompaniment of life, and should as far as possible characterize every schoolroom. Frost is not more destructive of the bursting bud, than arbitrary repression of the growing mind. Let liberty have its proper place.

3. The spirit of the primary school should be a spirit of love. What sunshine is to the garden, love is to the schoolroom. Lichens will grow on rocks, and stunted oaks are found in high altitudes; some hardy flowers may bloom even in the snow. But

luxuriance of vegetation, rich fruits, and golden harvests are the products of warmer climates. That which is noblest, sweetest, best in child-life is evoked by sympathy, gentleness, patience. The primary school needs a summer climate. It is only as we enter into closest relationship with the child-heart that we reach and move that delicate and yet mighty engine, the child's will. Whom the child loves he obeys. Fear degrades, paralyzes, dwarfs; love ennobles, quickens, makes grand. The child that loves truth, beauty, goodness, strives for them, and by the striving becomes good and beautiful and true. Let love reign.

4. But I would not be understood to favor lawlessness. The primary school must be a place of law. What I plead for is that the law may be rational and not arbitrary. The principle of loyalty is deeply imbedded in the human soul. Man from his very nature is an obedient animal. While he craves liberty, he heartily concedes homage. The child loves order, system, rule, and submits easily and happily to control if wisely managed. There must in every school be rules and regulations, laws and penalties, restraint, discipline, government. But it should be such government as is consonant with the highest welfare of the child and the deepest demands of his nature. The laws of the schoolroom should be only such as are necessitated by the nature of the case; they should be founded on justice, enforced by wise penalties, and administered in loving firmness. The child's obedience should seem to spring from

within. The law should as far as possible be self-imposed. What is most desired is not obedience, but loyalty. Servile obedience is degrading whether in child or man. School discipline is not designed to foster obedience for its own sake. But loyalty, a glad, free subjection to law, is ennobling. The soul can never outgrow the need of loyalty. The school should seek to cultivate this spirit. A child loyal to truth, to duty, to conscience, will be loyal to the State and to God. Encourage loyalty.

The primary teacher who enters the school with this high ideal of the nature of the work, realizing the forces to be dealt with, the ends to be aimed at, the methods to be employed, the spirit to be cultivated, will find the schoolroom an enchanting place, and the work there full of inspiration. Each day will bring its own reward, and each trial will have its compensation. To witness the young minds growing in power to know, to feel, and to do, and, under the sweet influences of liberty, law, love, and kindly guidance, becoming wise, strong, and good, will be a sight ever new, beautiful, and glorious.

Let these be your foundation words — life, liberty, love, loyalty.

THE TEACHER'S GROWTH.

WE expect very much of you in the future, and in order that you may know what our hopes are, I will briefly enumerate some of the things which we hope you will do.

We expect you to continue to be students of pedagogy. During your connection with the normal school your attention has been directed to this subject; you have worked faithfully and successfully, and have made a good beginning. But all that we have aimed to do has been to open the matter before you, give you a clew to it, awaken an interest in it, suggest books and plans of study, point out some of its practical bearings, and acquaint you with some of its elementary truths. We think that most of you are now prepared to begin for yourselves an extended, systematic, thorough investigation of this great subject. Pedagogy is a philosophical science. It rests upon definitions and first principles. Its parts are correlated and mutually dependent. Its laws can be formulated, its conclusions verified, its principles admit of exact application, and their results can be anticipated with a large degree of certainty and precision. But the data for the science must be gathered from many and widely diverse fields. Pedagogy is the science of developing the human soul to its highest degree by means of teaching. It involves, therefore, a knowledge of man in his entirety. Not merely psychology and physiology, but anthropology, history, logic, rhetoric, literature, sociology, every science or branch of knowledge which throws light upon man in any of his relations, stages of development, or activities, is drawn upon for its contribution to the science of pedagogy. Nothing which concerns man is foreign to this science. A careful reading of books which

treat of these various subjects, a critical observation of men in the ordinary walks of life, a perusal of the daily papers, a careful study of the children under your care in their ordinary work and in their play, noting their methods, scrutinizing their motives, and withal a searching analysis of the workings of your own minds and the action of your own wills, will furnish an ever-increasing store of fresh and interesting facts that must find a place in any comprehensive scheme of education that seeks to make the most of each human soul whose destiny is committed to your care. These facts are to be sifted, analyzed, compared, and from them, by a painstaking induction, you are to reach your own conclusions. Facts you may gain from others, the philosophy must be your own. This is no easy matter. It cannot be done without labor, and it requires time. I believe that you are prepared to do this kind of work, and we shall be disappointed when you return to us year by year, if we do not find you still enthusiastic students of that science which Rosenkranz has taught you to love.

Again, we expect you to be progressive. Our work has been that of seed-sowing. You have taken into willing and receptive minds great germinal truths, which are to grow and bear rich fruitage. At first your work will not satisfy you; it will fall far short of your ideals; often it will bitterly disappoint you. The principles you have learned will not seem to apply, your methods will not work, children will not conform to your notions of psychology, your

apparatus will not seem to fit, and you will be in despair. Let me say for your encouragement that the most hopeless cases we send out are those who do their best work in their first school. Imitators may do well at the start, but they never do any better. Those who do independent work, who elaborate their own methods, who work not by rule but according to principle, learning from their failures, adapting their work to the conditions of their schools and the idiosyncrasies of their pupils, who test everything by experience, verify all their hypotheses and modify their philosophy to conform to facts as they find them, those who blend profound philosophy with practical good sense, — these grow, and become better teachers with each succeeding year. Solid reputation is of slow growth, and if in ten years you establish a reputation as successful teachers, we shall be entirely satisfied. Read and reflect, study books and minds, let your philosophy be practical, and your practice philosophical. Investigate with the humility of those who think that they know nothing, opening your ears to hear all voices. But execute your matured plans with the confidence of those who, feeling no misgivings of their philosophy, have confidence in themselves and faith in human nature. In your studies be teachable as children; in your work be fearless as warriors. Thus will you grow in knowledge, wisdom, and skill. Those whom you teach will feel the quickening influence of your presence, catch your enthusiasm for truth, imitate your methods of work,

imbibe your philosophy of life, and take on the stamp of your character. Your services will be in demand, your labors rewarded, your own self-respect satisfied, and your teachers, tithing your success, will grow rich in honors and find the reward of their labors.

TRAINING FOR CITIZENSHIP.

WHEN you enter upon your work as teachers you become state officials. You have been educated by the State at public expense in order that you may be qualified to assist in training the youth of the State for the duties of citizenship. In addition to teaching the common branches of learning, you are to take special pains to inculcate those fundamental conceptions of civic virtue that will fit your pupils to become useful members of the State.

What is civic virtue? What is it to be a good citizen? What ideal will you hold before your pupils? Let me help you to answer.

1. In the first place, the good citizen is he who by his intelligence and thrift is able not only to maintain himself, but also to add something to the general prosperity. There should be no drones in society. All should in some way be producers. You are to inculcate in the minds of your pupils the idea that nothing but inability exonerates any citizen from honest labor, either with hand or brain.

2. In the next place, good citizenship requires that every member of the community should labor

for the common good. We are all children of one father, joint heirs of the heritage of nature, — "earth, air, fire, and water," — and so intimately associated as to be mutually dependent upon each other. The State is the mother of us all and has a claim upon our service. The State makes wealth possible, and gives to life some of its greatest attractions. It has a right to claim from the citizen that he shall not simply pay his taxes and perform forced service, but that he shall regard it a privilege to give freely and voluntarily of his means for public improvements, highways, buildings, parks, libraries, and educational and charitable institutions. He is a child of the State, and should exhibit a filial regard for her welfare, honor, adornment, and progress. That State is poor indeed where public spirit is lacking.

3. Again, in a republic which is a "government of the people, for the people, and by the people," it is incumbent upon every citizen to take an active, intelligent, honest part in political matters. To vote is not a privilege, a luxury, but a duty. Liberty is a responsibility. Every public school maintained by the State for the sake of the State should teach every boy to regard the ballot as a sacred trust which is to be used not for private gain, but for the public weal. The man who sells his vote bargains away his manhood. And he who corrupts the franchise by bribery, intimidation, or other means is a public enemy. To vote is a duty; to vote wrong may be a blunder; to refuse to vote at all is a crime.

4. Another cardinal element of civic virtue is

obedience to law. The sovereignty of the people is expressed in laws. To violate law is to array one's self against the majesty of the State. It is to be disloyal. It matters not what the law is, whether it commends itself to our judgment as wise and wholesome or not. So long as it stands on the statute books it should be obeyed. If we set it at defiance we ally ourselves with the criminal class as the enemies of order and government, and we give our sanction to violence and crime of every kind. We thus strike a blow at the foundations of society. The loss of respect for the throne was a precursor and a cause of the French Revolution. The loss of respect for law in our Republic will hasten the overthrow of our liberty. The bulwark of our liberties is in the loyalty of our citizens. The State looks to you to inculcate in the minds of its youth the loftiest conceptions of the majesty of law, and the most ardent devotion to its service by ready, constant, intelligent obedience to its commands.

I charge you to ponder well this subject of American citizenship: reflect on the nature of the great experiment of freedom that is being tried on so vast a scale on this continent; think what issues for humanity hang on the result; consider the perils that threaten it, and remember how great a privilege it is to be allowed to take an active part, however humble, in training multitudes of boys and girls for citizenship. The Republic is safe if the schoolteachers fearlessly and intelligently do their whole duty. See that you do your part in sending out from

your schools those who will enter life's active duties with the loftiest motives of patriotism, public spirit, and devotion to duty.

A PROFESSIONAL SPIRIT.

You will illustrate your own motto, "Unity in diversity," for while each one of you has your own distinct individuality always asserting itself, you are nevertheless one in aim, in spirit, and in work. Not the least feature of our interest in you has been in watching the play of these two seemingly antagonistic forces, selfhood and comradeship. They are not really antagonistic, but are complementary. Each needs the other. Each one of you has been benefited by the attrition of mind, the recognition of rights, the surrender of claims, the subordination of the individual to the common good, demanded by the exigencies of class association. How greatly you have been benefited you cannot now know, but in future years, when the varied experiences of life have given you a profounder consciousness of self and a broader philosophy of education, you will realize what the class has done for you. We are sorry to see this relationship, fraught with so much good, suddenly and forever largely broken up.

And yet we remember that the day which dissolves this class relationship substitutes for it the fellowship of teachers. We rejoice to welcome you to-day into the ancient and honorable guild of schoolmasters. Let me earnestly advise that henceforth

you cultivate and exemplify in its highest form the professional spirit. Be teachers in fact, and not merely in name. In all the range of human activity there is no work more dignified than that done by the teacher. To be in any degree instrumental in the formation of exalted characters, awakening a love of truth, quickening the conscience, developing the will, fixing firmly in your minds a high ideal of life and setting young feet in paths of rectitude, stimulating the noblest desires of which the human heart is capable, indicating honorable ways of gratifying those desires, pointing out to the innocent and inexperienced the dangers and pitfalls of life, and in implanting such principles of conduct as will enable them to go on their perilous way in security and confidence, awakening in all a tender heart of pity for the lowly and unfortunate, and suggesting ways and means of alleviating the sorrow and affliction of their fellows is a part of the high and holy calling of the teacher. Magnify your office.

Cherish the highest ideals for your own personal careers. Let every success but stimulate you to still greater efforts. Remember that you can never do so well that there will not remain the possibility of doing better. No human teacher has ever attained perfection. To train one's mind for its lifework is a task of supreme difficulty, and no one ever attempted it without the painful consciousness of partial failure. Perhaps the surest signs of growth in your ability to work will be the pangs of

disappointment at your failures. Welcome criticism as pointing to unattained excellence, distrust praise as tending to deaden your efforts: read the most difficult books, study the highest models, subject your best efforts to the most rigid scrutiny, and do not be disappointed if your ideals always elude you. The caterpillar is content to crawl upon the ground because it has no experience of anything better; the eagle rests upon one mountain-top only to renew its strength and prepare for higher flights.

In such work as yours there can be no absolute failure. Every honest effort will be fruitful of good, for you teach by example, and honest effort is itself contagious and helpful. Every impulse toward a better life will go on doing its work forever. One single lesson may arouse energies otherwise dormant that will accomplish marvelous things in the destiny of the individual. The child of poverty and obscurity that sits a humble learner at your feet may one day rule the nation. The destiny of the Republic of the future is in the hands of the school-teachers. You are sure of your reward. Each day's toil is registered in character, engraven in memory, and in numerous ways will enrich and bless you.

CHARACTER BUILDING.

BEAR in mind that the chief work of the school-teacher is that of character building. The pupils committed to you are not so many pitchers to be filled with learning: they are moral beings to be

trained for life's duties. The knowledge which you impart to them is valuable chiefly as an instrument in developing their intellectual and moral power. It is of much less consequence to them and to the world what they learn, than it is what they become. They are entrusted to you not so much that they may be taught as that they may be trained. In after-life they will make very little use of the particular facts which they learn from you, but they will be called upon every day that they live to make constant use of the mental powers that have been developed through your agency. Their ability to discharge the duties that may devolve upon them in the various positions that they may be called upon to fill will depend far less upon their knowledge than upon their character. Their own personal well-being, their enjoyment of the blessings of life, their appreciation of the possibilities of living, their power to resist temptation, ability to cope with evil, susceptibility to influences for good, will result not so much from their knowledge as from their moral discipline.

Every intelligent observer of human nature knows that society suffers more to-day from rascality than from ignorance. Defalcations in business, infidelity to trusts, violations of law, disturbances of the public peace, invasions of the sanctity of the family, are not faults of ignorance, but are vices. The widespread and fearful corruption of the ballot is not due to the illiteracy of those who sell their votes, but to the cunning knavery of unprincipled men

who use their knowledge for base purposes. The State has far more to fear from the man without honesty than from the man without learning. Ignorance is pitiful, knavery is destructive. Preparation for citizenship, which is the chief end for which the State maintains schools, is to be accomplished by the inculcation of right principles of action, the awakening of lofty desires, and the developing of correct habits.

The very idea of education involves the formation of character. To educate is to develop; to call into action latent powers; to kindle emotions; to form habits. The child cannot be educated without being led to discriminate truth from error, and good from evil. From the very nature of the case the teacher must make constant appeals to motives; must excite the conscience and move the will. If in the daily work of the schoolroom the child is taught to love truth, to govern his actions by reason and conscience, his thoughts, desires, and actions will tend to the formation of an upright character.

The discipline of the school, which aims primarily at securing good order, quiet, studiousness, fidelity, regularity, obedience, and other results without which the true ends of the school cannot be reached, is founded upon justice, makes use of moral means for the accomplishment of its ends, appeals constantly to the conscience and the reason of the pupil, and must result to a certain degree in the formation of character.

It is not so much the teacher's duty to form right

characters as it is his exalted privilege. The knowledge you impart may be forgotten, but the characters you form are largely indestructible. The work which surpasses all others in this world in intrinsic dignity, in its permanency, in its wide-reaching influence, in the rich results that flow out of it, is that of character building. You can aspire to nothing higher, you can attempt nothing greater.

The thought of this great privilege will of necessity condition all your work. In giving instruction your aim will be not so much to lodge facts in the memory as to lead your pupils to assimilate the truth imparted, and to form right intellectual habits. In appealing to motives to induce them to perform the allotted daily tasks you will look beyond the mere performance of a school duty, and will endeavor to touch those mainsprings of action which will fit them for the performance of the more important duties of life. Your entire system of discipline, while it aims at immediate results, will include in its scope the formation of life habits. The children whom you train in your little world, and who are occupied to-day with childish pursuits, will at no distant day be the men and the women who will bear upon their shoulders the burdens of society and be engaged in fighting the battles of humanity. Men are but children of a larger growth. The characters fashioned in your schoolrooms will largely shape their destinies and fit or unfit them for careers of usefulness.

You have special facilities as teachers for doing

this great work. The school is a miniature world and tends to call into exercise, on a narrow field, all the motives that influence men on the larger field of life's activities. The growth of character which goes on during school life, whether you will it or not, takes place under your eyes and is very largely subject to your direction. The influences that are so powerful in molding character are largely subject to your control. It rests with you what motives to call into action, what ideals shall be presented for imitation, and what habits shall be formed, for you are to be masters. Not even to their parents do children yield themselves to be guided in their conduct more absolutely than to their teachers. To many a school boy and girl the teacher is more a model of imitation and an authority to be obeyed than is father or mother.

The chief factor in this great work of character building is your own personality. The fountain does not rise higher than its source. What you say will be conditioned all the while by what you are. The children with whom you deal, whose characters you attempt to fashion, are keen observers of human nature, and should your own character not correspond with your precepts, they will be quick to discern it. They are quicker to imitate example than to obey rules. The best way, therefore, for you to lead your pupils to the formation of high and noble characters is for you to exhibit such a character before them in all your dealings with them. If you yourselves are enthusiastic lovers of truth,

ardent admirers of the beautiful, conscientious in the discharge of duty, considerate of the rights of others, and if you seek to regulate your thoughts, words, and actions by the highest considerations of duty, your influence upon those whom you teach will be in the highest degree uplifting. Such as you are they will strive to become.

A PLEA FOR THE PUBLIC SCHOOLS.

You have been educated in the public schools, and the public has the right to expect that you will ever have a good word to say for them. In behalf of the free public schools of America it may be urged: —

1. They are the poor man's friend. They bring to the cottage life's greatest treasures, knowledge and wisdom. The mass of people are and ever have been poor. Life for them is a struggle. Education is a boon because it puts the poor man's son into possession of power. It lifts him from the low plane of ignorant animalism, develops his reason, and enables him to begin life more nearly upon terms of equality with the rich man's son. Education levels up.

2. They are the rich man's opportunity. One of the greatest privileges of wealth is the opportunity to help the poor. "It is more blessed to give than to receive." The best gift possible to an earnest, ambitious girl or boy is an education whereby he may help himself. The surest preventive of the evils of poverty is a practical education that renders

an individual independent and self-reliant. It is better to build schoolhouses than almshouses. There is no better scheme for utilizing wealth and of giving it the widest possible distribution than the public-school system. The socialism of culture is the panacea for nihilism and anarchy.

3. They are the safeguards of liberty. A free people must be an intelligent people. Ignorance and freedom are incompatible. "A government of the people, for the people, and by the people" cannot be maintained long without universal education. The public-school system of America is the best means ever yet devised in the whole course of human history for the education of the whole people. They are for all — not for the few. No other system ever did reach the masses, and no other ever will. If the people are to be educated, the people must do it. If our Republic is to endure, it must be by the beneficent work of the public schools.

4. They are the nurseries of a genuine democracy. They are the people's schools. In the public schools no caste is known, no class distinctions are recognized except those that arise from merit and scholarship. In the school all meet on a common level, rich and poor, high and low, the aristocrat and the pauper. All races, creeds, colors, and social classes enter these halls on the same plane. The honors are to the meritorious. Merit wins. Equality is the watchword that is at once a spur to the rich sluggard and an encouragement to the humblest child of poverty.

5. They are American. Nothing, perhaps, is so

distinctively a product of the soil as is the American school system. In these schools all speak a common language; race distinctions give way to national characteristics; mutual respect and esteem take the place of class hatred and suspicion; old country traditions are displaced by a new patriotism. The pupils may enter heterogeneous aliens; they emerge homogeneous Americans. Individualism, freedom, culture, are agents of wondrous transforming power.

6. They are training-schools of character. A broad intelligence is the foundation upon which they build, but intelligence is only a foundation. The public schools foster industry, order, neatness, punctuality, regularity, thoroughness, respect for authority, and obedience to law. These are of the essentials of school life. They develop a love of truth for truth's sake and insist on fidelity to trusts. They awaken self-respect, independence of thought, and beget the habit of regulating the life in accordance with reason and conscience. They call out respect for the rights of others, and regard not only for the rights of property, but also for the rights of conscience. They awaken love for the true, the beautiful, and the good, reverence for law, justice, and God. They develop thus robust, manly characters, and fit their students for lives of honor, happiness, and usefulness.

INDEX OF PRINCIPAL SUBJECTS.

Abstraction, 67.
Academic work, in Normal Schools, 306.
Addison, 145.
Agassiz, 139.
Aiden, 193.
Analysis, 67; of the subject, 185; and synthesis, 186, 294; need of, 187, 207.
Ancestry, 211.
Anderson, 5, 102, 252.
Angelo, 194, 271.
Anthropology, 286.
Aristotle, 266.
Arithmetic, method of teaching, 210, 215; should secure intellectual discipline, 217.
Ascham, 130.
Athens, 104; temple of, 253.
Athenian instructors, 252.
Authority, necessity for, 172; blind submission to a bygone, 177.

Bacon, 158.
Beard, 42.
Berkeley, Bishop, 268.
Bible, 52.
Biography, form of, 211.
Books, value of, as testimony and as authority, 149; not a substitute for thinking 141; training to use, 157; of reference, needed in every school, 102; sets of, from library, 163.
Brown, Dr. John, 65, 313.
Brooks, 216.

Calvin, 114.
Carlyle, 158, 195, 268.
Catiline, 115.
Champaign, University of, exhibit at Chicago, 73.
Channing, 10, 268.
Chapel, Sistine, 195.
Character, 330; building of, in Normal School, 299; teacher's chief work, 343.
Charlemagne, 317.
Citizenship, 329; training for, 338.
Classifying, 70, 207.
Classical study, wrong method of, 202.
Coleridge, 252, 268.
Colleges, 263.
Color, 43, 45, 99.
Cologne, Cathedral of, 39, 270.
Columbus, 115.
Comenius, 42, 137, 317.
Comparison, 64, 68, 207.
Compayré, 5, 70, 180, 200.
Conscience, 17, 350.
Curiosity, great value of, 132; difference in, 133, 201; lack of, 202, 203.
Currie, 78, 145.

Darling, 312.
Dewey, 112.
Definition, 207.
De Graff, 216.
De Garmo, 278.
Demosthenes, 105.
Description, 207.
Development of faculties, limited, 17.
Dictionary, 96, 102.
Didactics, 272, 293.
Dickens, 312.
Difficulties, significance of, 319.
Drawing, 40, 72, 208.

Economy, school, 295.
Edgeworth, 210.
Education, definitions of, 10, 11, 27, 28; implies knowledge, 12; mental power, 14; sensibility and conscience, 17; a firm will, 18; does not create, 16; consists

often in telling, 20; common view of, 33; a lifelong process, 128; should lead to independent inquiry, 212; should be many-sided, 245; a complex process, 284; agencies of, 284; philosophy of, 290; history of, 291; the new, 316; old as the human race, 317; practical lower than liberal, 12; nature of, 13; self-, 127.
Emerson, 158.
Enjoyment, varies greatly, 17.
Erasmus, 196.
Ethics, a recitation in, 26; study of, 288.
Ethnology, 289.
Examinations, 72, 103, 239; purposes of, 241; how conducted, 247.
Exercise, a condition of development, 230; fundamental law, 292.

Facts, value of, 263.
Faculties, first formed, 42; order of development of, 292.
Family, the, 280.
Feelings, capacity for, 82; analysis of, 82; index of the soul, 83; importance of, 84, 85; issue in action, 84; can be evoked, 87; tend to persist, 88; opportune moments for awakening, 88; subject to law, 91; how to train, 92.
Fitch, 278.
Fleming, 52.
Freiburg, the great organ of, 79.
Fractions, based upon division, 219; decimal, how taught, 219.
Freedom, the goal of culture, 122; of child to be respected, 131; kindled by freedom, 168; training for, 169; modifies our institutions, 171; man's normal state, 174.
Froebel, 112, 217, 317.
Fuller, 252.

Geography, 56; furnishes material for language lessons, 100; law of activity in, 141.
Generalization, 70.
Geometry, method of study of, 23, 24; law of activity in, 141.
Gladstone, 320.
Goethe, 112, 180.
Goldsmith, 252.
Gove, 240.
Grant, General, 120, 303, 330.
Grammar, a finishing instrument, 96; technical, 102; learned by practice, 108; to be thoroughly studied, 108; should follow language, 137.
Grube, 218.

Hailman, 168.
Hale, 31.
Hamilton, 20, 64, 68.
Hancock, 192.
Harris, Dr., 168.
Harris, W. T., 5, 112, 126, 180, 278.
Harrison, 159.
Helps, Arthur, 20.
Herschel, 158.
Humor, value of, 258.
Hutten, Ulrich von, 196.

Ideas, how awakened, 28; elements of knowledge, 29; "mother ideas," 136.
Ideals, power of, 62; nature of, 253, 254.
Imagination, function of, 31; defined, 53; training of, 53; relation to art, 54; to worship, 55; is the soul, 56; handmaid of all the faculties, 56; how trained, 57; a creative power, 59; regulated by reason, 60; creates ideals, 62.
Independence, 318.
Incentive to study, examinations an, 241.
Induction, 70.
Indians, when educated, 13; at Carlisle, 153.
Instruction, how carried on, 32.
Intellectualism dry, tendency towards, 90.

Jacotot, favorite theory of, 142.
Johnson, Dr., 268.
Judgment, training of, 64; defined, 69.

Kant, 42.
Kindergarten, trains sensibilities, 93; games of, 135; law of activity in, 141.
Knowledge, implied in education, 12; either means or end, 12; how acquired, 22; has practical value,

24; contact with things, 28; elements of, 29; of material things, begins in sense perceptions, 30; relation to power, 34; foundation of, 42; of material things, 43; of extension, 68; should awaken emotion, 89; desire for, in childhood, 89; not all of education, 90; at first hand, 137; sources of, few, 139; not all through the senses, 209.
Lalor, 252.
Landon, definition of education, 27, 28, 52.
Language, power of, 25; should accompany sense training, 49; training in, 97; relation to thought, 97; and to business, 97; necessary to progress, 98; method of teaching, 98; object-lessons, 99; description, 100; compositions, 100, 104, 243; spelling, 100; reading, 101; letter-writing, 101; grammar, 96, 102; dictionary, 102; rhetoric, 102; literature, 103; the classics, 104; Latin, 106; pupil should learn his own, 96.
Laurie, 278.
Learning, intuitive, 136; source of joy, 136; indifference to, 138.
Learn, training to, 127; chief function of the teacher's office, 128; first condition of, 130; second, 132; third, 134; fourth, 136; fifth, 138; sixth, 140.
Leonardo, 271.
Lessing, 64.
Lincoln, 16, 320.
Libraries, number of, in the United States, 159; relations to public schools, 159; how to be made useful, 160; books from, 163; Providence and Worcester, 163; department of pedagogy, 165.
Literature, influence of, 101, 103.
Littlefield, 241.
Locke, 96, 180, 268, 317.
Logic, 288.
Lombard, Peter, 205.
Longfellow, 145.
Lord Mayor, 192.
Love, 252.
Luther, 147, 300.

Mac Donald, 52.
Manhood, complete, sought by education, 18.
Mann, Horace, 20.
Marcel, 96.
Memory, not learning, 30, 129; importance of, 203; pernicious habit of, 228; memoriter recitation, 32, 203.
Men, differ widely, 17.
Method, of training the senses, 44; the smell, 50; the imagination, 57; to think, 67; of industrial training, 73; of training the sensibilities, 92; of teaching Latin, 106; of training the will, 117; of causing to learn, 130; the man and his, 193; machine, 192; is applied philosophy, 195; no "The method," 196; in questioning, 199; of teaching arithmetic, 215; of Socrates, 200; relation of logic to, 289.
Methodology, 181; distinguished from methods, 183; preceded by logic, 184; treats of division, 185; arrangement, 186; oral teaching, 189; of reviews, examinations, etc., 189; of educational values, 189; value of the study of, 190, 293.
Metric System, how taught, 221.
Milan, Cathedral of, 274.
Milton, 78.
Milne, 216.
Moral training, 10, 18, 26, 27, 28, 35, 38, 74, 86, 88, 94, 112, 115, 119, 121, 131, 143, 150, 177, 314, 329, 332, 333, 334, 339, 343, 350.
Montaigne, 20, 129.
Morell, 168.
More, Hannah, 312.
Mowry, 5.
Music, should be taught scientifically, 147; training in, 147; an aid in government, 148; a means of physical training, 148; sweetens home life, 149; use of in worship, 150; in Germany, 150; part of a complete education, 153; should be taught in childhood, 155, a culture study, 156.

Nature, an educational force, 11; face-to-face contact with, 204.
Nicole, 20.
Normal School, teaching in, 142;

true function of, 277; a professional school, 286; course of study in, 268; a place for character building, 299; should be a model school, 299; value of, 301; academic work in, 306; changes in, 307.
Number, lessons should be language lessons, 99; method of teaching, 217; philosophy of, taught by questions, 209.

Obedience, inculcated, 172.
Object-lessons, use of, 44; lead to study of nature, 46.
Observation, 207, 208, 209; in number, 219.

Palmer, 201.
Parthenon, 253, 254, 255.
Payne, Joseph, 5, 126, 192.
Payne, W. H., 6.
Peaslee, 96.
Pedagogy, 265; foundation of, 266; elements of, 290.
Percentage, how taught, 224; unity of all the processes of, 228.
Pessimist, a, unfit for school-teacher, 259.
Pestalozzi, 78, 136, 137; method of, 195, 312, 317.
Philosophy, cannot be taught, 213; of questioning, 214.
Physiology, 286.
Plato, 5, 78, 145, 169, 317.
Porter, 64, 112.
Principles, illustrated by simple examples, 219.
Processes, taught before principles, 220.
Professional study, 286; spirit, 341.
Prophets, schools of, 317.
"Protest," 192.
Psychology, 287.

Questioning, method in, 199; Socrates' use of, 200; importance of, 201; purpose of, 204, 214; categories, 205; adapted to age and ability, 248.
Quintilian, 134, 317.

Ranier, Mount, 21.
Reasoning powers, 31.
Reduction, how taught, 210.
Reynolds, Sir Joshua, 268.
Robinson, 5.
Rosenkranz, 10, 113, 209.
Rousseau, 6, 42, 137.

Schools, criticism of, 34; trade, 72; supervision of, 73; dry intellectualism of, 90; religious tone of, 94; equalize life's blessings, 151; milder discipline of, 169; prepare for citizenship 172, 326, 338; may be self-governed, 179; necessity for, 280, 348; should do practical work, 281; secondary, 282; technical, 284; practice, 297; public, a plea for, 348.
Schoolmaster, the ideal, 251; day-dream of, 261.
Sciences, 20.
Selden, 97.
Self-activity, 20.
Senses, the training of, 43; need of early training, 44; purpose of, 45; is mind training, 45; distinguished from skill, 46.
Sensibilities, training of, 79; analysis of, 82.
Smell, sense of, slighted, 47; proper rank and function of, 47, 48; how trained, 49.
Socrates, method of, 142, 194, 200; master of questioning, 205.
Soul, has possibilities, 14; put into relationship with the universe, 14; a plan for, 40; a unit, 80; feels limitations of matter, 256.
Spencer, 126, 168.
Square root, how taught, 220.
State, influence of, 260.
Stockwell, 279.
Sully, 21, 43, 48, 64.
Supervision, need of, 246.

Talent, sought for, 259.
Tarbell, 240.
Teacher, the manner of, 11; should have a heart 92; should cause to learn, 128; should respect child's individuality, 130; should not tyrannize, 131; should strive after excellence in method, 196; qualities of, 253–275; public teachers, number of, 285; all teachers should have a professional training, 302; advice to young teachers, 311; teacher's

calling, 313; benefactor of all classes, 314; friend of the poor, 315; independence of, 318; special work of, 327; personality of, 347.
Teaching versus training, 25; dignity of, 36, 313; preparation for, 73; test of 245.
Test, in life, 34.
Theological Seminaries, 304, 307.
Thomas, General George H., 303.
Thinkers, great, few, 66.
Thinking, illustrated, 23, 24; dependent upon the senses, 43; function of a rational being, 65; pleasures of, 65; complex process, 66; elements of, 67; need of standards, 68; awakened by observation, 71; limited by language, 97; highest outcome of instruction 181; should begin early, 212; result of, 213; importance of, 268; independent, 321.
Thoroughness, promoted by examinations, 242.
Thring, 192.
Tools, use of, 46; may be pernicious, 74.
Truth, search after, 64,
Training, 19; defined, 22; object of, 22; calls powers into exercise, 25; taxes all faculties, 25; awakens desires, 26; only a part of teacher's work, 27; no instruction without, 28; prepares for active life, 33; method of, 38; industrial, 72, 73, 156. (See Table of Contents.)

Wayland, 10.
Wealth, chief value of, 320.
Weights and measures, how taught, 210, 220.
West Point, 303.
Whately, 253.
White, E. E., 112, 127, 200, 240.
Whewell, 10.
Will, defined, 112, 113; training of, 113; significance of, 114; as force, 114; as persistence, 115; included in education, 17; examples of, 114, 115, 116; sin of breaking the, 122; not to be subdued, 139.
Williams, Roger, 320.

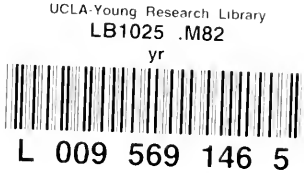
Young, 96.

UNIVERSITY OF CALIFORNIA LIBRARY
Los Angeles
This book is DUE on the last date stamped below.

Form L9-Series 444

3 1158 00454 3525

UC SOUTHERN REGIONAL LIBRARY FACILITY
AA 001 231 109 8


UCLA-Young Research Library
LB1025 .M82
yr
L 009 569 146 5